ORDER NO. HAD8508229A2

Service Manual

Music System

SG-D30

AM/FM Stereo Radio with
Cassette Tape Deck and Record Player

DOLBY SYSTEM

Color

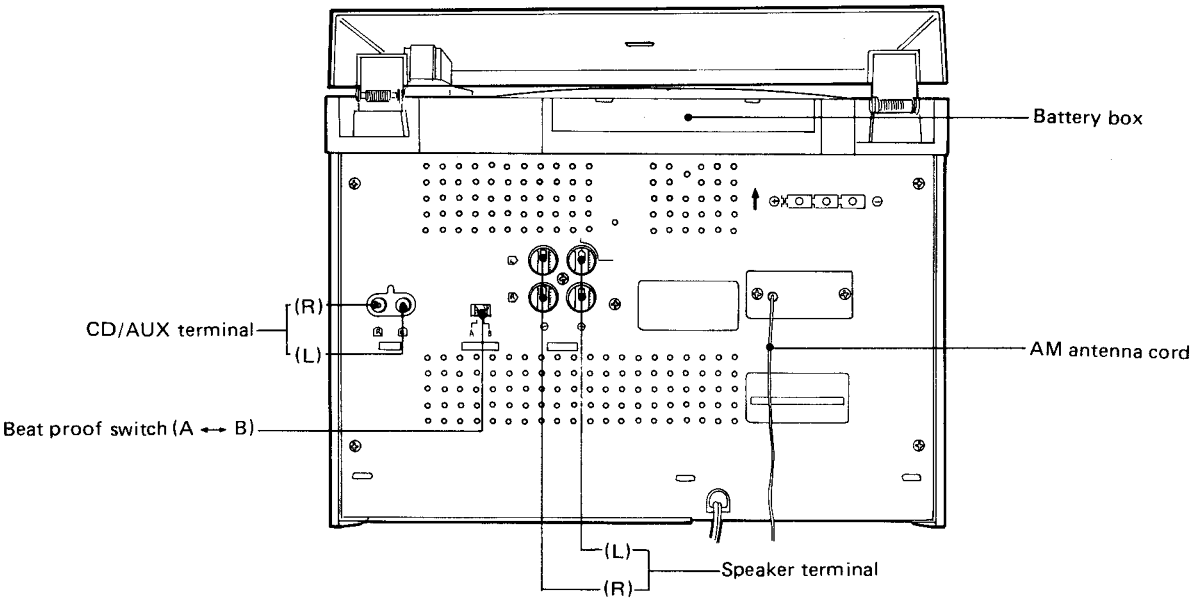
(K)······Black Type

Color	Area
(K)	[EG] ·····F. R. Germany

Please use this manual together with the service manual for Model No. SG—D30, Order No. HAD8507213C2.

■ CHANGE IN LOCATION OF CONTROL

- **Rear panel**


Battery box
CD/AUX terminal
(R)
(L)
AM antenna cord
Beat proof switch (A ←→ B)
(L)
(R)
Speaker terminal

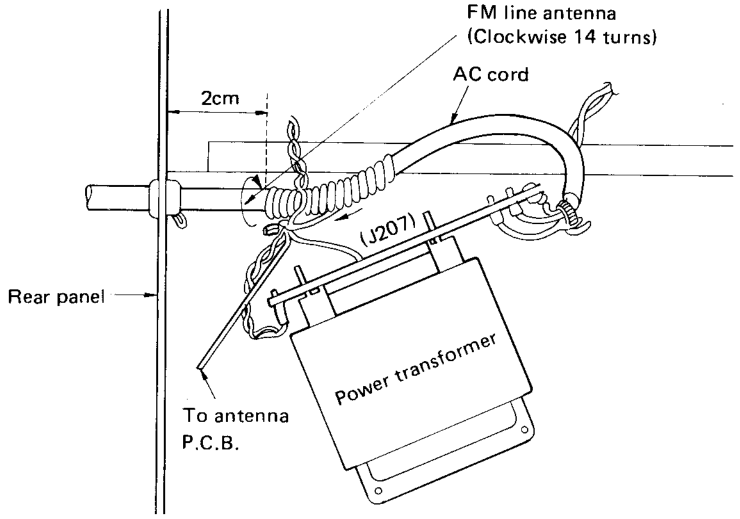
■ CHANGE IN SPECIFICATIONS

	[EX] area		[EG] area	
■ FM TUNER SCTION				
Antanna terminals	75Ω (unbalanced)	→	**Deletion**	
■ CASSETTE DECK SECTION				
Recording system	AC bias, 85kHz	→	Recording system	AC bias, **65kHz**
Erasing system	AC erase, 85kHz		Erasing system	AC erase, **65kHz**

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

■ DISPOSITION OF FM LINE ANTENNA

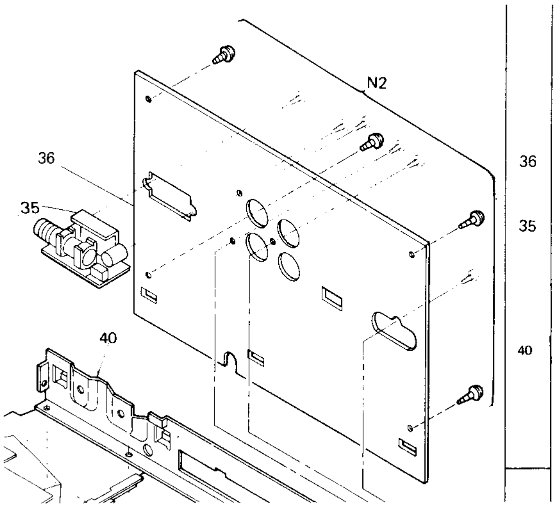

FM line antenna
(Clockwise 14 turns)
AC cord
2cm
(J207)
Rear panel
Power transformer
To antenna
P.C.B.

■ CHANGE OF REPLACEMENT PARTS LIST

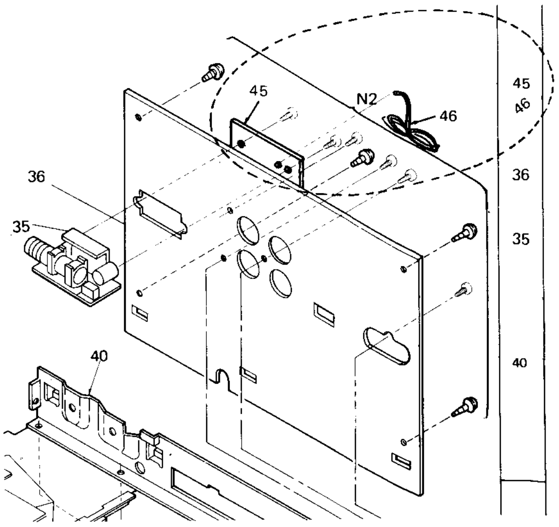
Ref.No.	Change of Parts No.		Description	Pcs /Set	Remarks
	SG-D30[EX] →	SG-D30[EG]			
RESISTOR PARTS					
R225	ERDS2TJ153	ERDS2TJ123	12kΩ	1	
R229,230	ERDS2TJ273	ERDS2TJ223	22kΩ	2	
R402	ERDS2TJ331	ERDS2TJ470	47Ω	1	
R429	——	ERD25FJ152	1.5kΩ (Addition)	1	
CAPACITOR PARTS					
C291	——	ECCD1H560K	56pF(Addition)	1	
C292	——	ECKD1H103ZF	0.01μF(Addition)	1	
C343,344	ECCD1H121K	ECKD1H271KB	270pF	2	
C403	ECQP1122JZ	ECQP1222JZ	0.0022μF	1	
C404	ECQP1123JZ	ECQP1223JZ	0.022μF	1	
C405	ECEA1CU470	ECEA1CU101	100μF	1	
C413	——	ECKD1H103ZF	0.01μF(Addition)	1	
TRANSISTOR					
Q406	——	2SD1512R	Transistor (Addition)	1	
COILS					
L211	——	ELEPK1R2MA	Choke(Addition)	1	
L402	——	SLQU270-4Y	Choke(Addition)	1	
CABINET and CHASSIS					
35	SJF4315	SJF4315-1	Antenna Terminal	1	
36	SGP6610E	SGP6610G	Rear Panel	1	
45	——	SGE1766	Plate Cover	1	
46	——	WQH70F	Cord,Antenna	1	
ACCESSORIES					
A2	SSA269	SJPGD30-KG	Cord,Antenna	1	

■ PARTS LOCATION OF CABINET AND CHASSIS

[EX] area

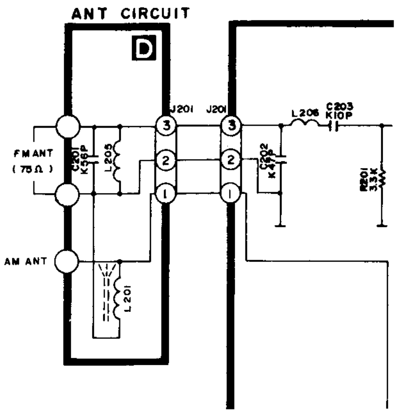

N2
36
35
40
36
35
40

[EG] area (Addition)

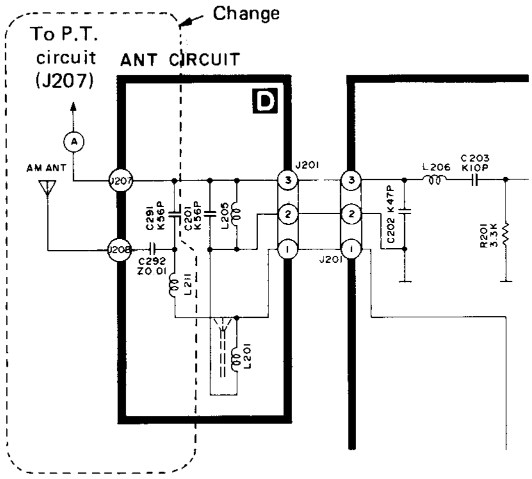

45
N2
46
36
35
40
45
46
36
35
40

■ CHANGE OF SCHEMATIC DIAGRAM

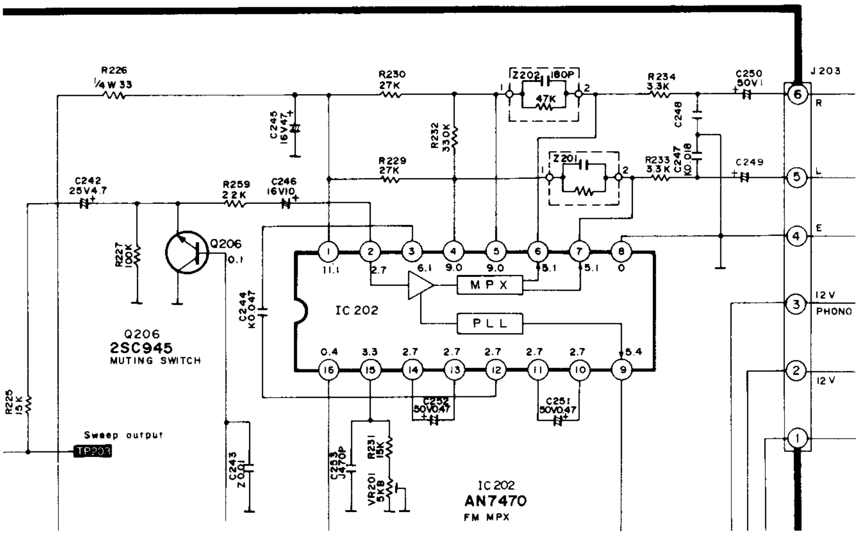
[EX] area


ANT CIRCUIT
D
FM ANT (75Ω)
AM ANT
C201 K56P
L205
L201
J201
J201
L206
C203 K10P
C202 K47P
R201 3.3K

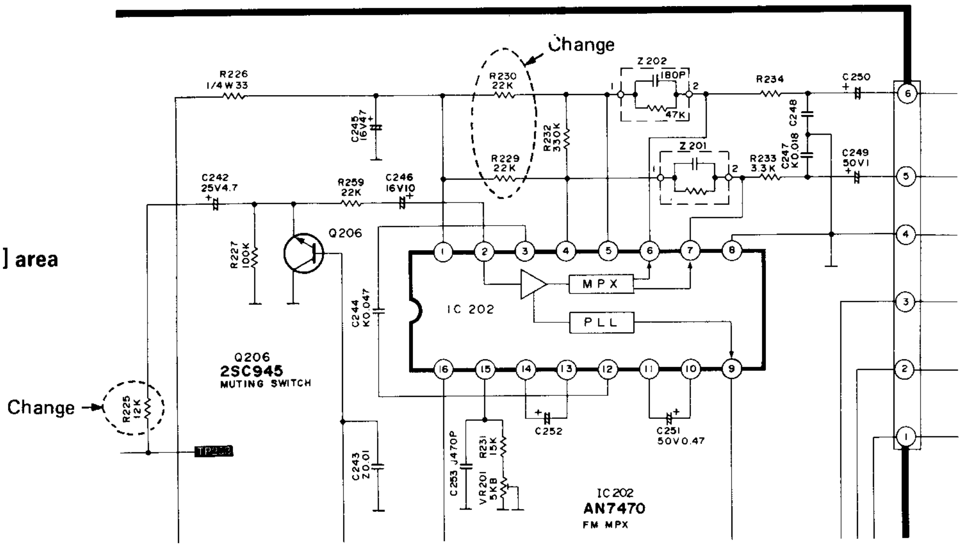
[EG] area


Change
To P.T. circuit (J207)
ANT CIRCUIT
D
A
AM ANT
J207
J208
C291 K56P
C201 K56P
L205
C292 Z0.01
L211
L201
J201
J201
L206
C203 K10P
C202 K47P
R201 3.3K

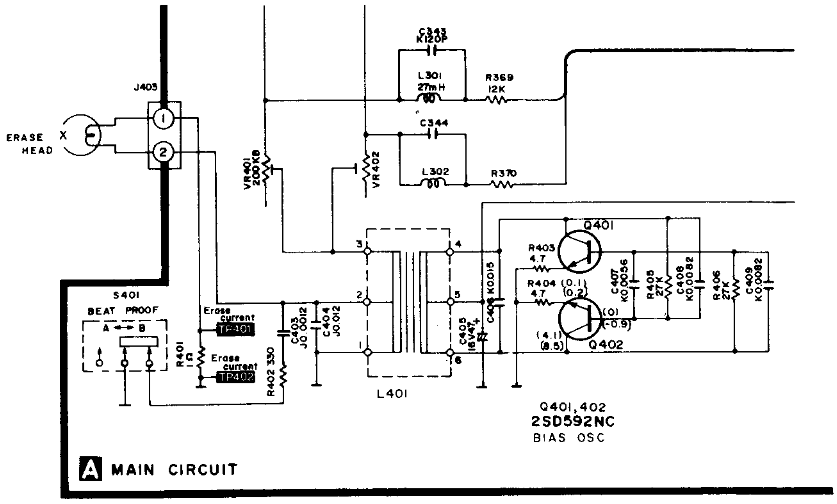
[EX] area


R226 1/4W 33
R230 27K
Z202 180P 47K
R234 3.3K
C250 50V1
J203
R
C245 16V47
R232 330K
C248
R229 27K
Z201
R233 3.3K
C247 K0.018
C249
L
C242 25V4.7
R259 22K
C246 16V10
E
R227 100K
Q206
IC 202
MPX
PLL
C244 K0.047
12V PHONO
12V
Q206 2SC945 MUTING SWITCH
R225 15K
Sweep output
TP203
C243 Z0.01
C253 J470P
R231 15K
VR201 5KB
C252 50V0.47
C251 50V0.47
IC 202 AN7470 FM MPX

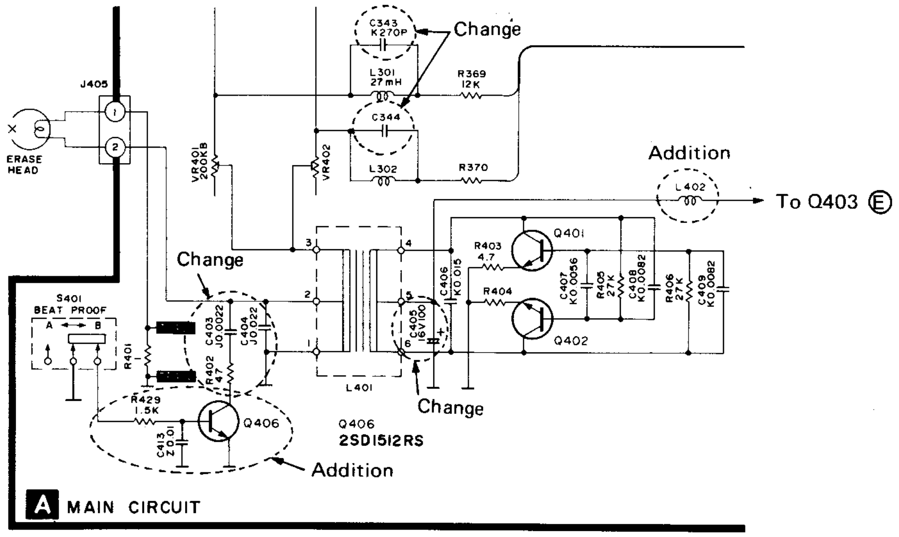
[EG] area


Change
Z202 180P 47K
R226 1/4W 33
R230 22K
R234
C250
C245 16V47
R232 330K
C248
Z201
R229 22K
R233 3.3K
C247 K0.018
C249 50V1
C242 25V4.7
R259 22K
C246 16V10
Q206
R227 100K
C244 K0.047
IC 202
MPX
PLL
Q206 2SC945 MUTING SWITCH
Change
R225 12K
TP203
C243 Z0.01
C253 J470P
R231 15K
VR201 5KB
C252
C251 50V0.47
IC 202 AN7470 FM MPX

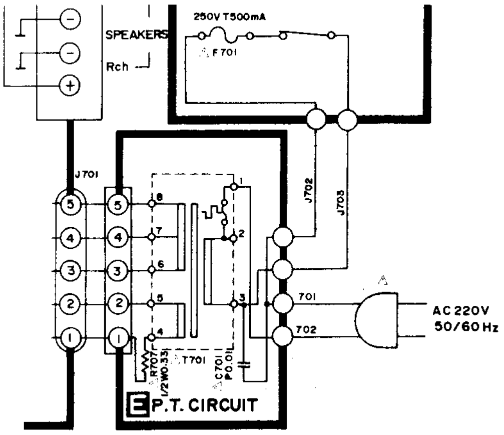
[EX] area


J405
ERASE HEAD
VR401 200KB
VR402
C343 K120P
L301 27mH
R369 12K
C344
L302
R370
Q401
Q402
R403 4.7
R404 (0.1) 4.7 (0.2)
C407 K0.0056
R405 27K
C408 K0.0082
R406 27K
C409 K0.0082
S401 BEAT PROOF
A B
Erase current
TP401
Erase current
TP402
R401 Ω
R402 330
C403 J0.0012
C404 J0.012
C405 16V47
C406 K0.015
L401
Q401,402 2SD592NC BIAS OSC
A MAIN CIRCUIT

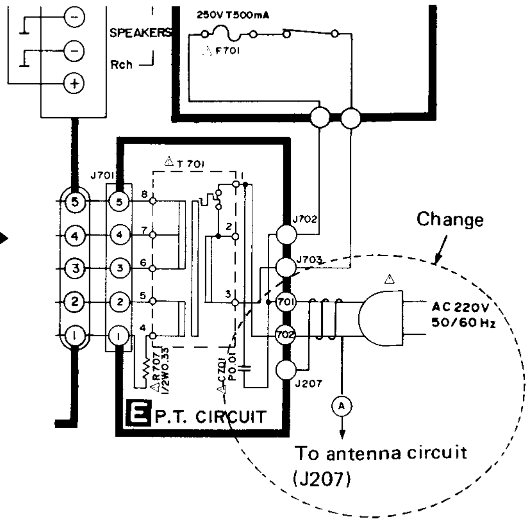
[EG] area


C343 K270P
Change
L301 27mH
R369 12K
C344
J405
ERASE HEAD
VR401 200KB
VR402
L302
R370
Addition
L402
To Q403 Ⓔ
Change
Q401
R403 4.7
R404
Q402
C406 K0.015
C405 16V100
C407 K0.0056
R405 27K
C408 K0.0082
R406 27K
C409 K0.0082
S401 BEAT PROOF
A B
R401
C403 J0.0022
C404 J0.022
R402 4.7
R429 1.5K
C413 Z0.01
Q406
Q406 2SD1512RS
L401
Change
Addition
A MAIN CIRCUIT

[EX] area


SPEAKERS
Rch
250V T500mA
F701
J701
J702
J703
701
702
AC 220V 50/60Hz
R707 1/2W0.33
T701
C701 P0.01L
E P.T. CIRCUIT

[EG] area


SPEAKERS
Rch
250V T500mA
F701
J701
T701
J702
J703
701
702
J207
Change
AC 220V 50/60Hz
R707 1/2W0.33
C701 P0.01L
A
To antenna circuit (J207)
E P.T. CIRCUIT

Printed in Japan
850801150 Ⓝ TI

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Service Manual

Music System
SG-D30

AM/FM Stereo Radio with
Cassette Tape Deck and Record Player

DOLBY SYSTEM

Color

(K)······Black Type

Color	Area
(K)	[EX]·······Scandinavia

Panasonic
Panasonic
Panasonic
2
1

SPECIFICATIONS

AMPLIFIER SECTION

Power output	
1 kHz continuous power output	
both channels driven	2 × 23W (THD 5%, 8Ω)
MPO	2 × 50W (THD 10%, 8Ω)
Total harmonic distortion	
half power at 1 kHz	0.07% (8Ω)
Power bandwidth	
both channels driven, −3 dB	15 Hz~45 kHz (8Ω)
Frequency response	
CD/AUX	20 Hz~30 kHz (−3 dB)
MIC	60 Hz~15 kHz (−3 dB)
Input sensitivity and impedance	
CD/AUX	150 mV/22kΩ
MIC	1.5 mV/10kΩ
Graphic equalizer	100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±10 dB
Load impedance	8Ω~16Ω

FM TUNER SECTION

Frequency range	87.50~108.00 MHz (50 kHz-steps)
Sensitivity	17.2 dBf (2.0 μV, IHF '58)
S/N 26 dB	1.5 μV (40 kHz mod., 75 Ω)
Total harmonic distortion	
1 kHz	0.15% (mono), 0.4% (stereo)
S/N	
MONO	68 dB (76 dB, IHF)
Frequency response	20 Hz~15 kHz, +0.5 dB~−2 dB
Image rejection at 98 MHz	45 dB
Stereo separation	40 dB (1 kHz), 35 dB (10 kHz)
Antenna terminals	75Ω (unbalanced)

AM TUNER SECTION

Frequency range	522~1611 kHz (9 kHz-steps)
	530~1620 kHz (10 kHz-steps)
Sensitivity (500 mW)	100 μV/m (999 kHz)
Image rejection	40 dB (999 kHz)

CASSETTE DECK SECTION

Deck system	Auto stop, double cassette system
Track system	4-track, 2-channel
record/playback	Solid Permalloy Head
playback	Solid Permalloy Head
erasing	Double-gap ferrite head
Motors	DC servo motor
Recording system	AC bias,85kHz
Erasing system	AC erase,85kHz
Tape speed	4.8 cm/sec(1-7/8 ips).
Frequency response	
NORMAL	30 Hz~15 kHz (DIN)
	40 Hz~14 kHz +3, −6 dB
METAL	30 Hz~17 kHz (DIN)
	40 Hz~16 kHz +3, −6 dB
S/N (Metal type tape)	
Dolby NR out	56 dB (A-WTD)
Dolby NR in	65 dB (CCIR)

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P.O. Box 288, Central Osaka Japan

ORDER NO. HAD8507213C2

Service Manual

Music System

SG-D30

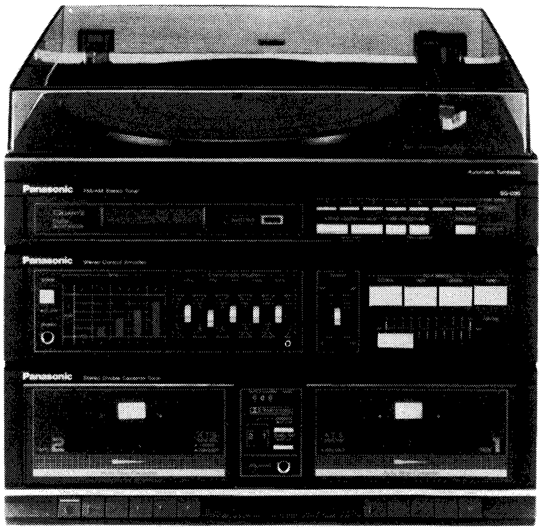
AM/FM Stereo Radio with
Cassette Tape Deck and Record Player

DOLBY SYSTEM

Color

(K)······Black Type

Color	Area
(K)	[EX]·······Scandinavia



SPECIFICATIONS

AMPLIFIER SECTION

Power output	
1 kHz continuous power output	
both channels driven	2 × 23W (THD 5%, 8Ω)
MPO	2 × 50W (THD 10%, 8Ω)
Total harmonic distortion	
half power at 1 kHz	0.07% (8Ω)
Power bandwidth	
both channels driven, −3 dB	15 Hz~45 kHz (8Ω)
Frequency response	
CD/AUX	20 Hz~30 kHz (−3 dB)
MIC	60 Hz~15 kHz (−3 dB)
Input sensitivity and impedance	
CD/AUX	150 mV/22kΩ
MIC	1.5 mV/10kΩ
Graphic equalizer	100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±10 dB
Load impedance	8Ω~16Ω

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Frequency range	87.50~108.00 MHz (50 kHz-steps)
Sensitivity	17.2 dBf (2.0 μV, IHF '58)
S/N 26 dB	1.5 μV (40 kHz mod., 75 Ω)
Total harmonic distortion	
1 kHz	0.15% (mono), 0.4% (stereo)
S/N	
MONO	68 dB (76 dB, IHF)
Frequency response	20 Hz~15 kHz, +0.5 dB~−2 dB
Image rejection at 98 MHz	45 dB
Stereo separation	40 dB (1 kHz), 35 dB (10 kHz)
Antenna terminals	75Ω (unbalanced)

AM TUNER SECTION

Frequency range	522~1611 kHz (9 kHz-steps) 530~1620 kHz (10 kHz-steps)
Sensitivity (500 mW)	100 μV/m (999 kHz)
Image rejection	40 dB (999 kHz)

CASSETTE DECK SECTION

Deck system	Auto stop, double cassette system
Track system	4-track, 2-channel
record/playback	Solid Permalloy Head
playback	Solid Permalloy Head
erasing	Double-gap ferrite head
Motors	DC servo motor
Recording system	AC bias,85kHz
Erasing system	AC erase,85kHz
Tape speed	4.8 cm/sec(1-7/8 ips).
Frequency response	
NORMAL	30 Hz~15 kHz (DIN) 40 Hz~14 kHz +3, −6 dB
METAL	30 Hz~17 kHz (DIN) 40 Hz~16 kHz +3, −6 dB
S/N (Metal type tape)	
Dolby NR out	56 dB (A-WTD)
Dolby NR in	65 dB (CCIR)

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Wow and flutter	0.1% (WRMS)
Fast forward and rewind time	Approx. 150 seconds with C-60 cassette tape

■ PHONO SECTION

Player system	Belt drive, Automatic turntable
Phono motor	DC servo motor
Turntable size	28 cm (11")
Turntable speeds	33 1/3rpm, 45 rpm
Cartridge type	ceramic (Part No. EPC-13STH)
Stylus	sapphire (Part No. EPS-41ST)
Stylus pressure	5.5 g

Note:
Specifications are subject to change without notice.
Weight and dimensions shown are approximate.

■ GENERAL

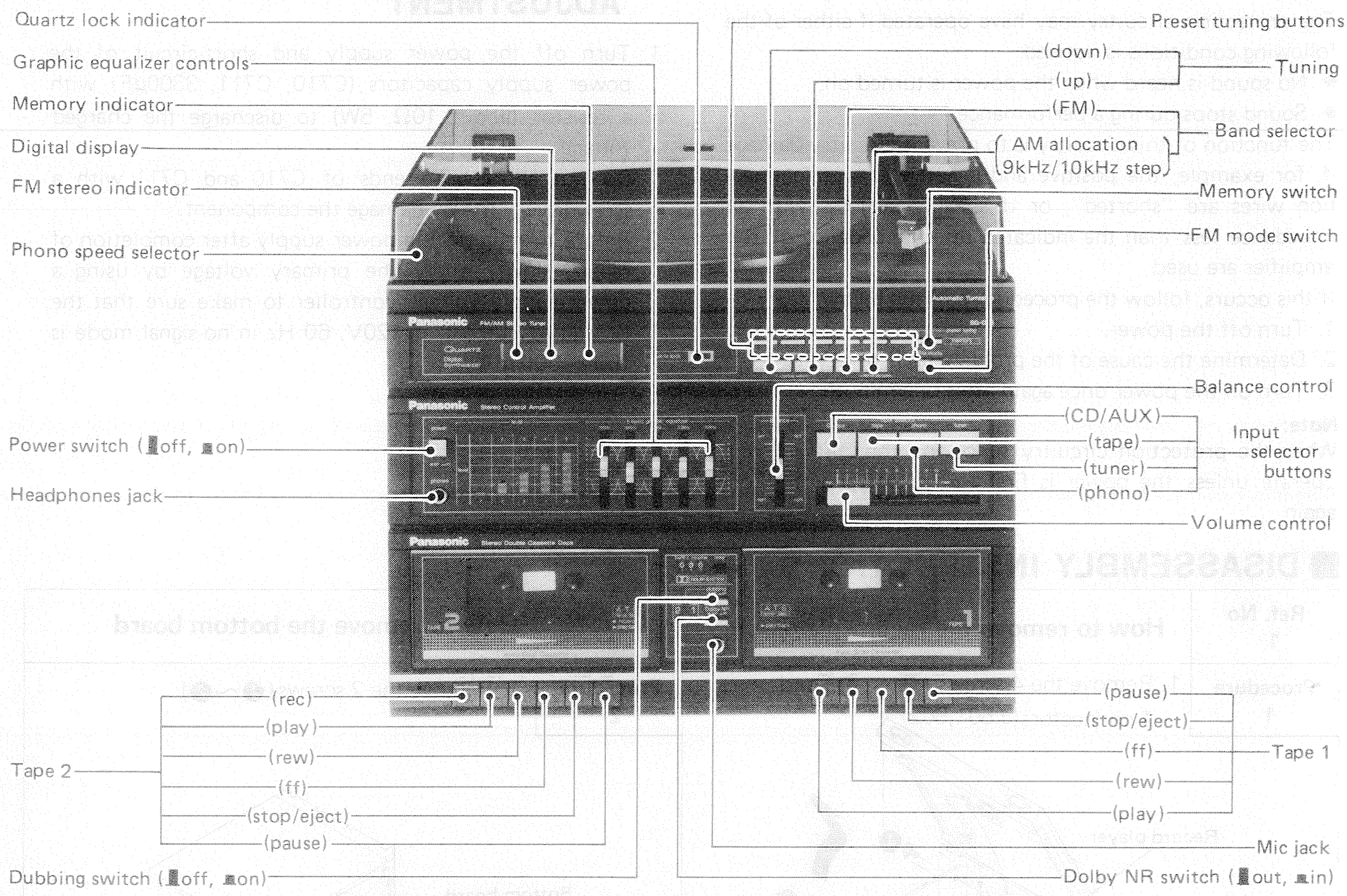
Power supply	AC 50 Hz/60 Hz, 220V
Batteries (memory back up)	DC 4.5V (3 × "AA" size batteries, Panasonic UM-3 or equivalent)
Power consumption	130W
Dimensions (W×H×D)	380 × 319.5 × 346 mm (14-31/32" × 12-19/32" × 13-5/8")
Weight	7.2 kg (15.9 lb.)

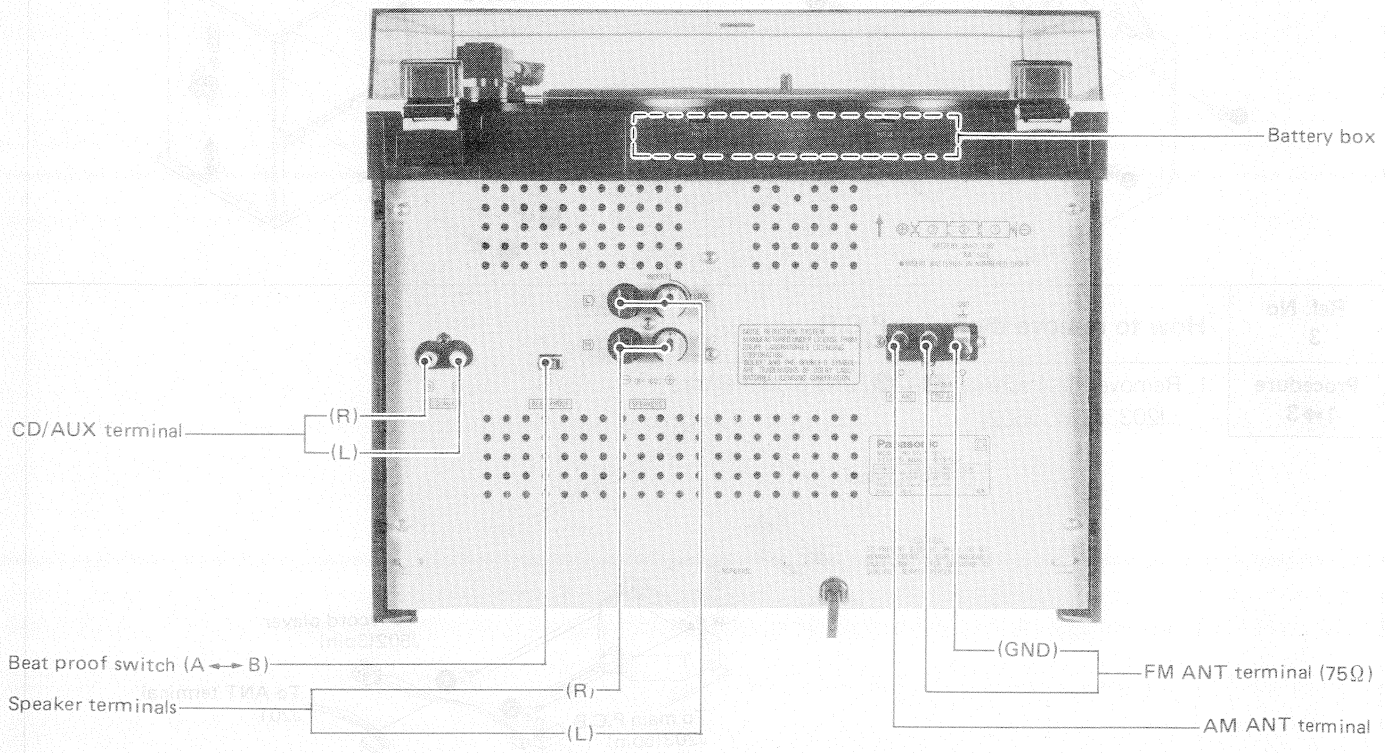
*Specifications are subject to change without notice for further improvement.
Design and specifications are subject to change without notice.
*'Dolby' and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

■ CONTENTS

Page
SPECIFICATIONS..1, 2
LOCATION OF CONTROLS.................................3
PROTECTION CIRCUITRY.................................4
BEFORE REPAIR AND ADJUSTMENT.........................4
DISASSEMBLY INSTRUCTIONS.............................4 ~ 6
HOW TO REPLACE IC'S(Small outline type)..............7
RESISTORS AND CAPACITORS.............................8,9
LIQUID CRISTAL DISPLAY(LCD)..........................9
MEASUREMENTS AND ADJUSTMENTS.........................10 ~ 13
FUNCTION OF TERMINAL (PLL CONTROLLER IC203)..........14
WIRING CONNECTION DIAGRAM............................15,16
Page
PRINTED CIRCUIT BOARDS...............................17 ~ 19
BLOCK DIAGRAM..20 ~ 22
LOCATION OF CASSETTE DECK............................23
PARTS LOCATION OF CASSETTE
TAPE DECK (tape1, tape2).............................24,25
SCHEMATIC DIAGRAM....................................26~32
TERMINAL GUIDE OF TRAN SISTORS, DIODES AND IC'S......26
PARTS LOCATION OF RECORD PLAYER......................33
PARTS LOCATION OF CABINET AND CHASSIS................34
REPLACMENT PARTS LIST................................35,36

LOCATION OF CONTROLS

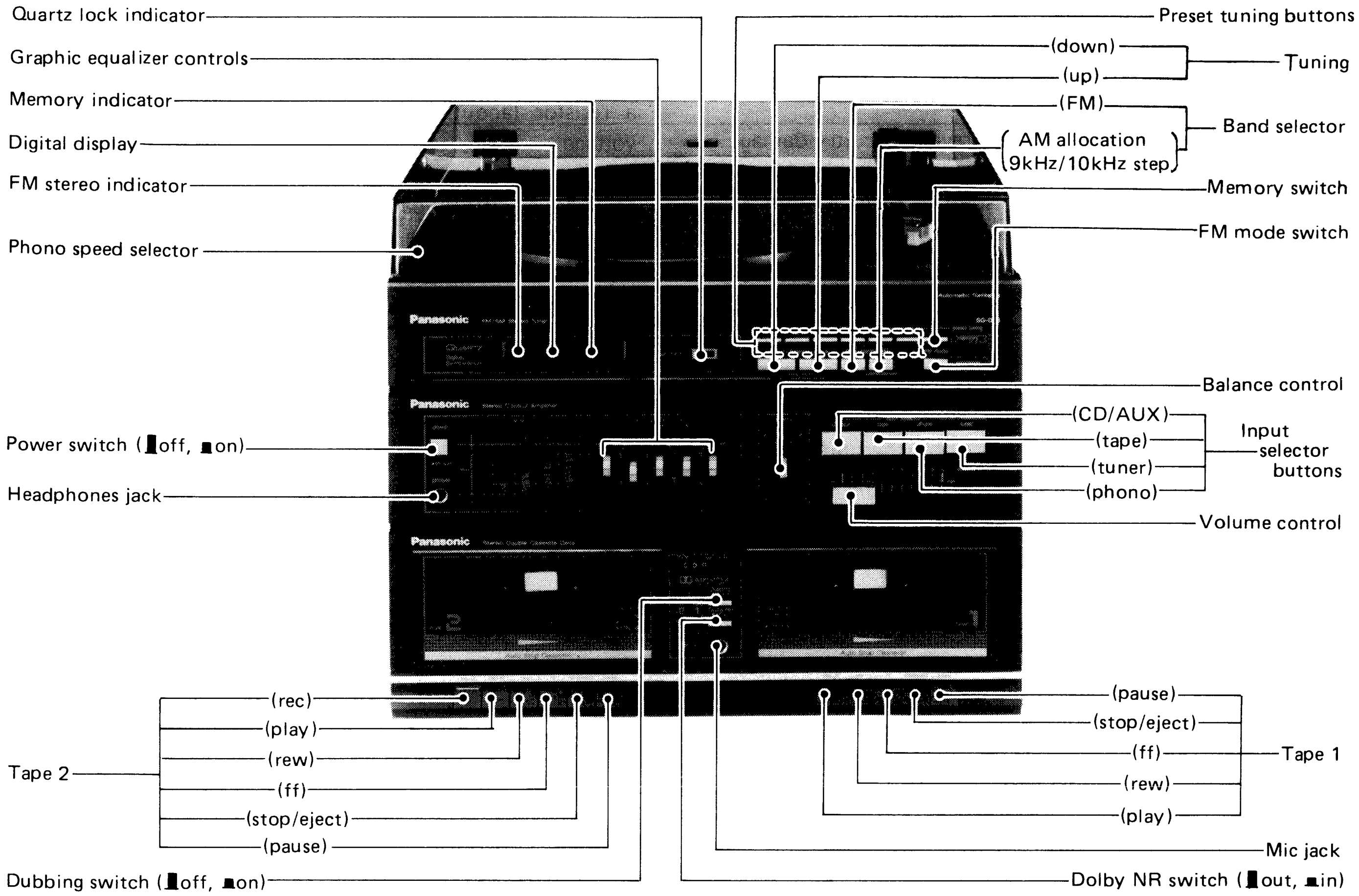

Quartz lock indicator
Graphic equalizer controls
Memory indicator
Digital display
FM stereo indicator
Phono speed selector
Power switch (▮off, ▬on)
Headphones jack
Preset tuning buttons
(down)
(up)
Tuning
(FM)
Band selector
AM allocation (9kHz/10kHz step)
Memory switch
FM mode switch
Balance control
(CD/AUX)
(tape)
(tuner)
(phono)
Input selector buttons
Volume control
Tape 2
(rec)
(play)
(rew)
(ff)
(stop/eject)
(pause)
Dubbing switch (▮off, ▬on)
(pause)
(stop/eject)
(ff)
(rew)
(play)
Tape 1
Mic jack
Dolby NR switch (▮out, ▬in)

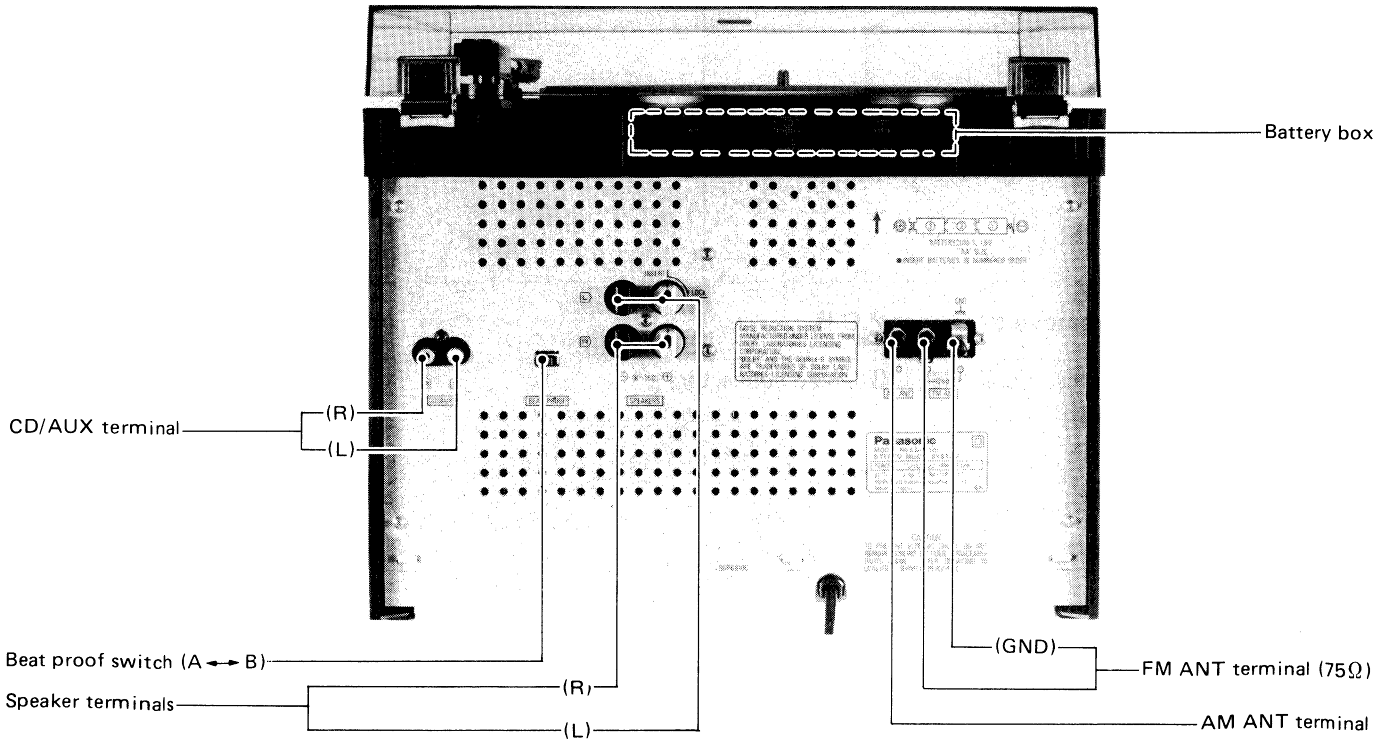

Battery box
CD/AUX terminal
(R)
(L)
Beat proof switch (A ←→ B)
Speaker terminals
(R)
(L)
(GND)
FM ANT terminal (75Ω)
AM ANT terminal

Beat proof switch contens

This switch is to be used when recording AM broadcasts. If any regularly recurring noise is heard during the recording, set this switch to the "A" or "B" position (i.e., to the position where the least noise is heard).
This switch is only effective for recording AM broadcasts.

■ LOCATION OF CONTROLS


Quartz lock indicator
Graphic equalizer controls
Memory indicator
Digital display
FM stereo indicator
Phono speed selector
Preset tuning buttons
(down)
(up)
Tuning
(FM)
AM allocation 9kHz/10kHz step
Band selector
Memory switch
FM mode switch
Balance control
(CD/AUX)
(tape)
(tuner)
(phono)
Input selector buttons
Volume control
Power switch (▮off, ▄on)
Headphones jack
Tape 2
(rec)
(play)
(rew)
(ff)
(stop/eject)
(pause)
Dubbing switch (▮off, ▄on)
(pause)
(stop/eject)
(ff)
(rew)
(play)
Tape 1
Mic jack
Dolby NR switch (▮out, ▄in)


Battery box
CD/AUX terminal
(R)
(L)
Beat proof switch (A ◄► B)
Speaker terminals
(R)
(L)
(GND)
FM ANT terminal (75Ω)
AM ANT terminal

Beat proof switch contens

This switch is to be used when recording AM broadcasts. If any regularly recurring noise is heard during the recording, set this switch to the "A" or "B" position (i.e., to the position where the least noise is heard).
This switch is only effective for recording AM broadcasts.

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:

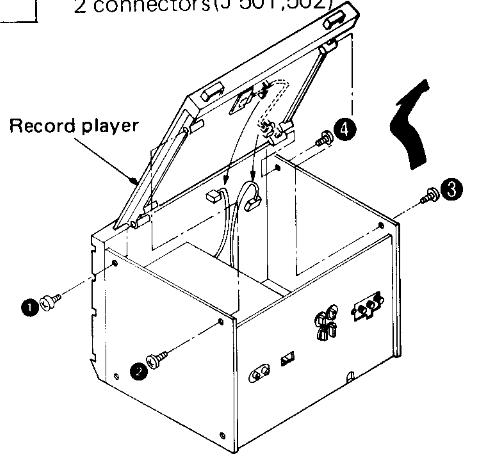
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ BEFORE REPAIR AND ADJUSTMENT

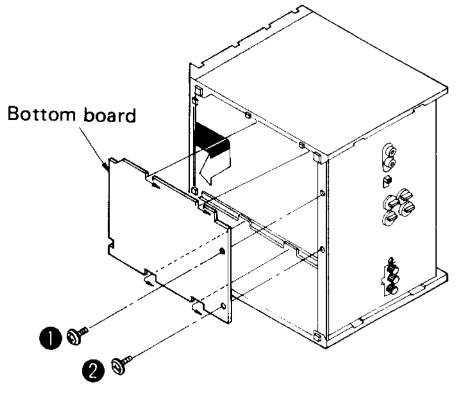
1. Turn off the power supply and short-circuit of the power supply capacitors (C710, C711, 3300μF) with a resistor (about 10Ω, 5W) to discharge the charged voltage.
   Do not short both ends of C710 and C711 with a screwdriver. It may damage the component.
2. Before turning on the power supply after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 120V, 60 Hz in no-signal mode is 100 ~ 300 mA.

■ DISASSEMBLY INSTRUCTIONS

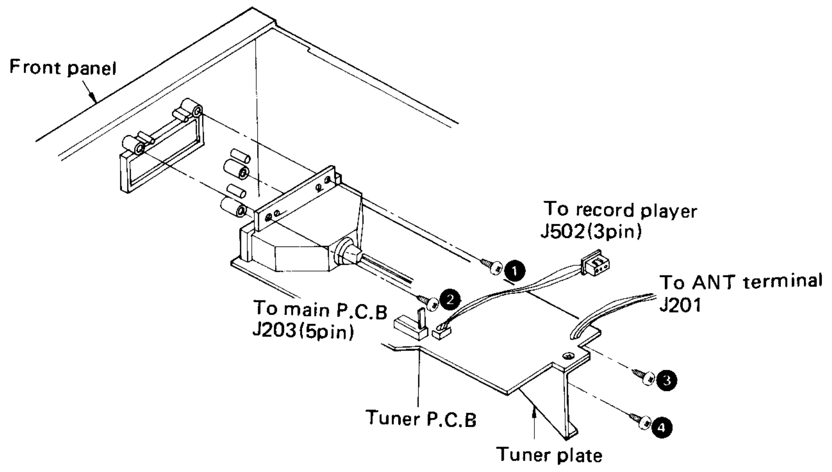
Ref. No **1**	**How to remove the record player**
Procedure **1**	1. Remove the 4 screws (❶ ~ ❹) and 2 connectors(J 501,502).



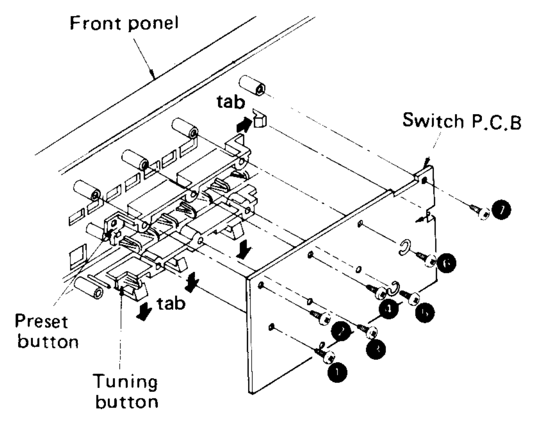
Ref. No **2**	**How to remove the bottom board**
Procedure **2**	1. Remove the 2 screws(❶ ~❷)



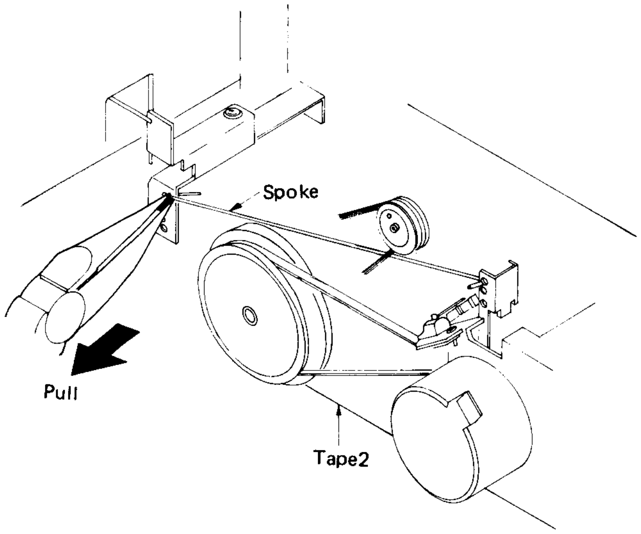
Ref. No **3**	**How to remove the tuner P.C.B.**
Procedure **1➡3**	1. Remove the 4 screws (❶~ ❹) and 3 connectors (J203, J201, J502).



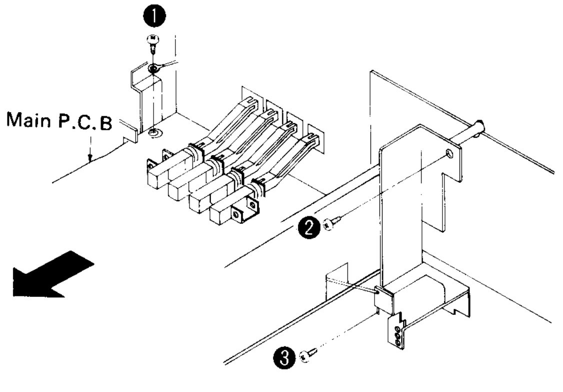
Ref. No 4	How to remove the switch P.C.B.
Procedure 1➡4	1. Remove the 7 screws (❶～❼) and 4 tabs.


Front ponel
tab
Switch P.C.B
❼
❻
❺
❹
❸
❷
❶
tab
Preset button
Tuning button

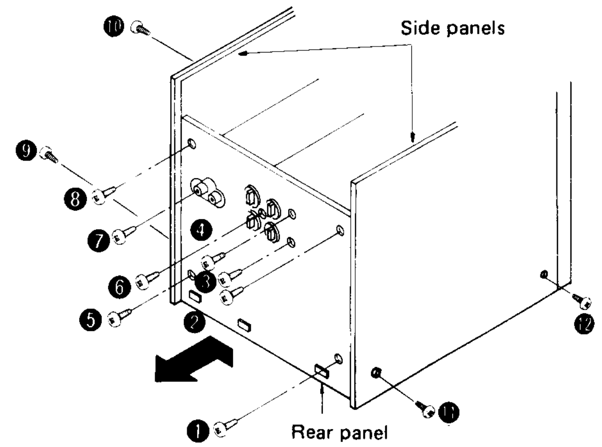
4. Remove the spoke of tape 2.


Spoke
Pull
Tape2

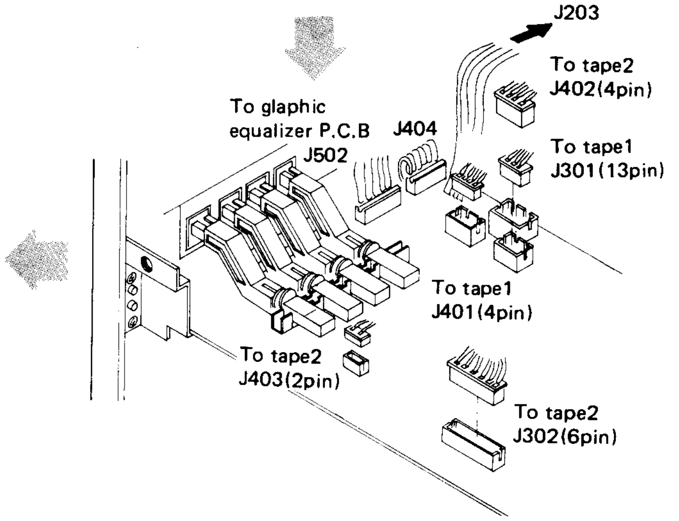
5. Remove the 3 screws (❶～❸)
Pull the main P.C.B.


❶
Main P.C.B
❷
❸

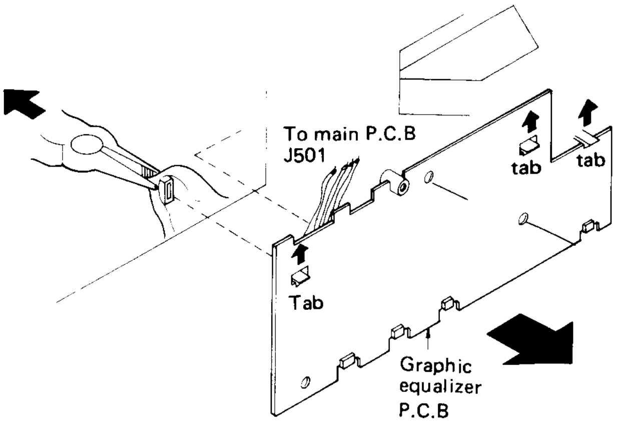
Ref. No 5	How to remove the main P.C.B.
Procedure 1➡5	1. Remove the 12 screws. (❶～⓬). 2. Remove the rear panel and side panels.


❿
Side panels
❾
❽
❼
❹
❻
❸
❺
❷
⓬
⓫
❶
Rear panel

3. Remove the 9 connectors (J 301,302,401,402,403, 404,502,503)


To tuner P.C.B J203
To tape2 J402(4pin)
To glaphic equalizer P.C.B J502
J404
To tape1 J301(13pin)
To tape1 J401(4pin)
To tape2 J403(2pin)
To tape2 J302(6pin)

Ref. No 6	How to remove the graphic equalizer P.C.B.
Procedure 1➡5➡6	1. Remove the 6 knobs. 2. Remove the 3 screws (❶～❸)and 3 tabs

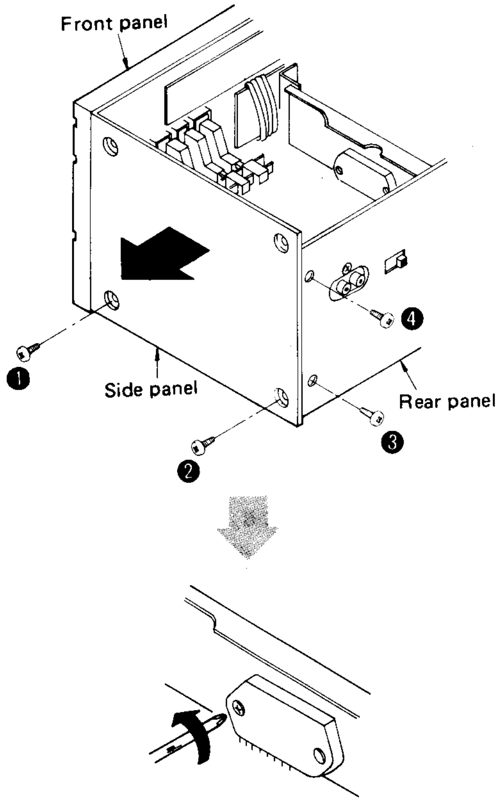

To main P.C.B J501
tab
tab
Tab
Graphic equalizer P.C.B

Ref. No
7

How to change the power IC

Procedure
1➡2➡7

1. Remove the 4 screws(❶~❹)
2. Unsolder the power IC or regulator transistor.


Front panel
Side panel
Rear panel
❶
❷
❸
❹

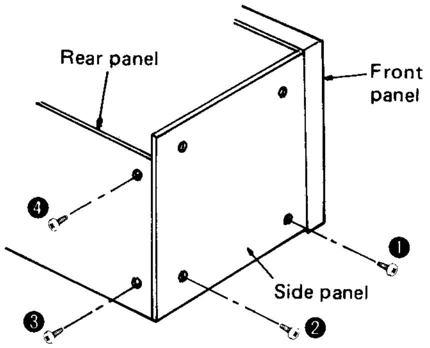
- When mounting the power amp. IC, apply silicone compound (SZZ0L15) to the rear side of power amp IC.

Ref. No
8

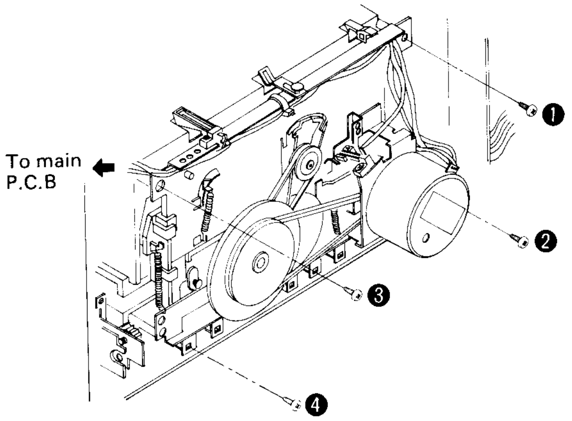
How to remove the cassette deck.

Procedure
1➡2➡7➡8

1. Remove the 4 screws (❶~❹) of side panel and rear panel.


Rear panel
Front panel
Side panel
❶
❷
❸
❹

2. Remove the 4 screws(❶~❹)of cassette deck.


To main P.C.B
❶
❷
❸
❹

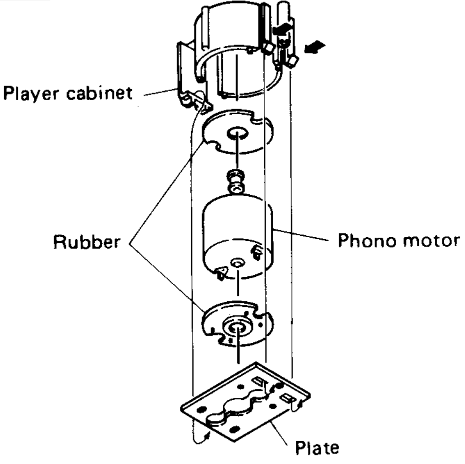
3. Remove the spoke from the record function arm. (Tape 2 only) (Refer to Ref. No. 5 item 4 on page 5)

Ref. No
9

How to remove the phono motor

Procedure
1 ➡ 9

1. Remove the 1 screw.
2. Push the 2 claws.

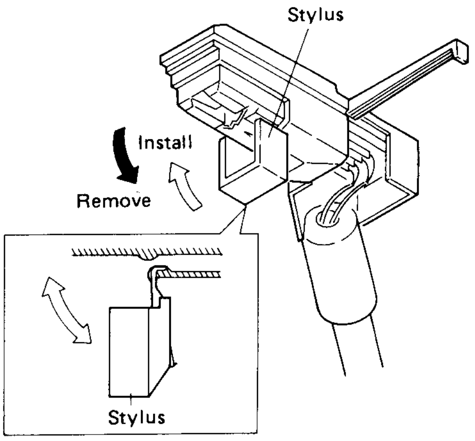

Player cabinet
Rubber
Phono motor
Plate

Ref. No
10

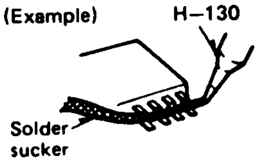
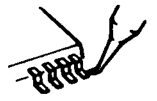
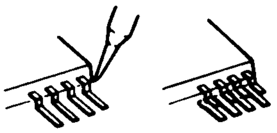
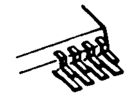
How to remove the stylus

Procedure
10

1. Remove the stylus.


Stylus
Install
Remove
Stylus

■ HOW TO REPLACE IC'S (Small outline type)

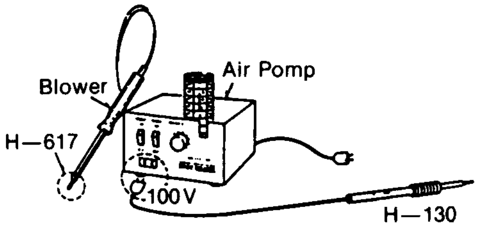
Replacing procedure			Cautions
1	Reduce the amount of solder on each pin of the integrated circuit by use of a solder sucker.		● **Recommended tool** ....Special soldering iron *H605M and H—130. *H605E and H—130. ● Do not touch the soldering iron to the area for a long time. It may otherwise cause removal of the print foil. ● When shifting the pin upward, do the job quickly while the solder is melting. If the solder is hard, it may cause removal or breakage of the print foil. ● When using a pencil type soldering iron. 1. Completely remove the solder from each IC pin by use of solder sucker. 2. Raise each pin by means of an eyeleteer, hold the pliers then remove IC package from P.C.B.
2	Melt the solder on the pin (one electrode) with the soldering iron.		
3	While the solder is melting, shift the pin upward by the soldering iron to remove it from the foil.		
4	Remove each pin from the foil according to the above-mentioned procedure.		

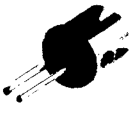
*** Special soldering iron**
(Refer to Technical Information, ORDER NO. GAD84125486T1)...For U.S.A. and Canada
(Refer to Technical Information, ORDER NO. GAD84115476T8)...For others

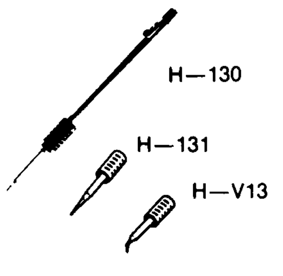
- **H—605 Spot Heater (hot-air solder iron)**

This device that uses hot air to melt solder was developed to remove Flat-Pakage ICs, RHCs and chip parts.

- H—605M (For 120V power source)
- H—605E (For 200V/220V/240V power source)







- **H—617 Twin Nozzle (for spot heater)**

Special nozzle for the removal of RHCs and chip resistors.
(Nozzle diameter : 1.0 mm x 2)

- **H—130 Slim Pencil Solder Iron**

An ultrasmall ceramic heater solder iron is extremely handy for soldering chip parts, RHCs, ICs, etc., to high-density circuit boards.
Features:

- Rated power: 100V, 15W
- Max. temp.: 400°C
- Heater: ceramic (long life)
- Insulation resistance: 100MΩ
- Length: 178 mm
- Weight: 16 g (not including cord)

- **H—131, H—V13 Cap Bits**

Solder tip for the slim pencil Solder Iron and is composed of a bit holder and a corrosion resistance solder tip.
Permits changing of solder tips even while still hot.

- Solder tip: 0.3 mm

RESISTORS AND CAPACITORS

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "Ⓢ" mark is service standard parts and may differ from production parts.
4. The unit of resistance is Ω , (ohm). K = 1000Ω, M = 1000kΩ.
5. The unit of capacitance is µF. (microfarad). P = 10^{-6} µF.
6. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all area.

Numbering System of Resister

Type	Wattage	Tolerance	Value
Three Letters	One or Two Letters	Two or Three Letters	Three or Four Letters
Example ERD	25	TJ	101

Resistor Type	Wattage	Tolerance
ERD: Carbon Film	1: 1W	F: ±1%
ERC: Solid	2: 2W	J: ±5%
ERX: Metal Film	12: 1/2W	K: ±10%
ERG: Metal Oxide Film	18: 1/8W	
ERO: High Stability Metal Film	25: 1/4W	
ERF: Flaneproof Wire-Wound Bath-Tube	50: 1/2W	
ERQ: Fuse Type Metal Film	2F: 1/4W	
RRD: Chip	S1: 1/2W	
	S2: 1/4W	

Numbering System of Capacitor

Type	Voltage	Value	Tolerance
Four Letters	One or Two Letters	Two or Five Letters	One or Two Letters
Example ECKD	1H	333	MD

Capacitor Type	Voltage	Tolerance
ECCD: Temperature Compensating Ceramic	KC: 400V	C: ±0.25pF
ECKD: High dielectric Constant Ceramic	OJ: 6.3V	D: ±0.5pF
ECQM: Polyester	1A: 10V	F: ±1pF
ECQP: Polypropylene Film	1C: 16V	J: ±5%
ECQS: Polystylene Film	1E: 25V	K: ±10%
ECFD: Semiconductor Ceramic	1V: 35V	M: ±20%
ECEA: Electrolytic	1H: 50V	P: +100, −0%
ECEB: Electrolytic	1J: 63V	Z: +80, −20%
ECET: Electrolytic	2A: 100V	
ECSF: Tantalum	25: 25V	
ECUX: Chip	50: 50V	
ECBS: Ceramic		
ECBT: Ceramic		

- RESISTORS

Ref.No.	Part No.	Value
R61	ERD10TLJ154U	150K
R62	ERD10TLJ104U	100K
R63	ERD10TLJ274U	270K
R64	ERD10TLJ473U	47K
R65	ERD10TLJ104U	100K
R66	ERD10TLJ332U	3.3K
R67	ERD10TLJ181U	180
R68	ERD10TLJ104U	100K
R69	ERD10TLJ102U	1K
R71	ERDS2TJ561	560
R72	ERDS2TJ561	560
R73	ERDS2TJ152	1.5K
R74	ERDS2TJ472	4.7K
R201	ERDS2TJ332	3.3K
R202	ERDS2TJ824	820K
R203	ERDS2TJ332	3.3K
R204	ERDS2TJ221	220
R205	ERDS2TJ470	47
R206	ERDS2TJ333	33K
R207	ERDS2TJ824	820K
R208	ERDS2TJ221	220
R209	ERDS2TJ221	220
R210	ERDS2TJ474	470K
R211	ERDS2TJ102	1K
R212	ERDS2TJ562	5.6K
R213	ERDS2TJ224	220K
R214	ERDS2TJ222	2.2K
R215	ERDS2TJ104	100K
R216	ERDS2TJ102	1K
R217	ERDS2TJ102	1K
R218	ERDS2TJ824	820K
R219	ERDS2TJ331	330
R220	ERDS2TJ681	680
R221	ERDS2TJ122	1.2K
R222	ERDS2TJ471	470
R223	ERDS2TJ822	8.2K
R224	ERDS2TJ222	2.2K
R225	ERDS2TJ153	15K
R226 Ⓢ	ERD25FJ330	33
R227	ERDS2TJ104	100K
R228	ERDS2TJ103	10K
R229,230	ERDS2TJ273	27K
R231	ERDS2TJ153	15K
R232	ERDS2TJ334	330K
R233,234	ERDS2TJ332	3.3K
R235,236	ERDS2TJ104	100K
R237	ERDS2TJ102	1K
R239	ERDS2TJ222	2.2K
R240,241	ERDS2TJ104	100K
R242	ERDS2TJ333	33K
R243	ERDS2TJ104	100K
R244	ERDS2TJ562	5.6K
R245	ERDS2TJ153	15K
R246	ERDS2TJ473	47K
R247	ERDS2TJ103	10K
R248	ERDS2TJ102	1K
R249	ERDS2TJ681	680
R250	ERDS2TJ822	8.2K
R251	ERDS2TJ562	5.6K
R252	ERDS2TJ103	10K

Ref.No.	Part No.	Value
R253,254	ERDS2TJ104	100K
R255	ERDS2TJ221	220
R256	ERDS2TJ104	100K
R257	ERDS2TJ332	3.3K
R258 Ⓢ	ERD25FJ2R2	2.2
R259	ERDS2TJ223	22K
R260	ERDS2TJ103	10K
R261,262	ERDS2TJ103	10K
R263,264	ERDS2TJ103	10K
R265,266	ERDS2TJ103	10K
R267	ERDS2TJ103	10K
R268	ERDS2TJ122	1.2K
R301,302	ERDS2TJ101	100
R303,304	ERDS2TJ224	220K
R305,306	ERDS2TJ470	47
R307,308	ERDS2TJ394	390K
R309,310	ERDS2TJ153	15K
R311,312	ERDS2TJ472	4.7K
R313,314	ERD25TJ221	220
R315,316	ERDS2TJ562	5.6K
R317,318	ERDS2TJ224	220K
R319	ERDS2TJ102	1K
R320	ERDS2TJ103	10K
R321,322	ERDS2TJ103	10K
R323,324	ERDS2TJ103	10K
R325,326	ERDS2TJ474	470K
R327,328	ERDS2TJ102	1K
R329,330	ERDS2TJ220	22
R331,332	ERDS2TJ123	12K
R333,334	ERDS2TJ154	150K
R335,336	ERDS2TJ123	12K
R337 Ⓢ	ERD25FJ221	220
R338	ERDS2TJ222	2.2K
R339	ERDS2TJ473	47K
R340	ERDS2TJ103	10K
R341	ERDS2TJ103	10K
R343,344	ERDS2TJ103	10K
R345,346 Ⓢ	ERD25FJ472	4.7K
R347,348	ERDS2TJ153	15K
R349	ERDS2TJ102	1K
R350	ERDS2TJ472	4.7K
R351,352 Ⓢ	ERD25FJ100	10
R353,354	ERDS2TJ101	100
R355,356	ERDS2TJ224	220K
R357,358	ERDS2TJ472	4.7K
R359,360	ERDS2TJ470	47
R361,362	ERDS2TJ394	390K
R363,364	ERDS2TJ153	15K
R365,366	ERDS2TJ562	5.6K
R367,368	ERDS2TJ224	220K
R369,370	ERDS2TJ123	12K
R371,372	ERDS2TJ103	10K
R373,374	ERDS2TJ102	1K
R375,376	ERDS2TJ222	2.2K
R377,378	ERDS2TJ103	10K
R379,380	ERDS2TJ221	220
R381,382	ERDS2TJ101	100
R383,384	ERDS2TJ122	1.2K
R385,386	ERDS2TJ222	2.2K

Ref.No.	Part No.	Value
R387	ERDS2TJ223	22K
R388	ERDS2TJ102	1K
R389,390	ERDS2TJ473	47K
R391,392 Ⓢ	ERD25TJ563	56K
R394	ERDS2TJ472	4.7K
R396	ERDS2TJ273	27K
R397 Ⓢ	ERD25FJ100	10
R398	ERDS2TJ472	4.7K
R399	ERDS2TJ273	27K
R401 Ⓢ	ERD25FJ1R0	1
R402	ERDS2TJ331	330
R403,404	ERDS2TJ4R7	4.7
R405,406	ERDS2TJ273	27K
R408 Ⓢ	ERD25FJ100	10
R409	ERDS2TJ471	470
R410	ERDS2TJ331	330
R411	ERDS2TJ223	22K
R412	ERDS2TJ473	47K
R413	ERDS2TJ103	10K
R415	ERDS2TJ103	10K
R416	ERDS2TJ473	47K
R417	ERDS2TJ472	4.7K
R418,419	ERDS2TJ103	10K
R420	ERDS2TJ333	33K
R421	ERDS2TJ103	10K
R422	ERDS2TJ122	1.2K
R423	ERDS2TJ473	47K
R425	ERDS2TJ103	10K
R427,428	ERDS2TJ223	22K
R451,452	ERDS2TJ104	100K
R453 Ⓢ	ERD25FJ330	33
R454	ERDS2TJ472	4.7K
R455	ERDS2TJ223	22K
R456	ERDS2TJ155	1.5M
R457	ERDS2TJ471	470
R458	ERDS2TJ103	10K
R459	ERDS2TJ103	10K
R503,504	ERDS2TJ155	1.5M
R505,506	ERDS2TJ155	1.5M
R507,508	ERDS2TJ103	10K
R509,510 Ⓢ	ERD25FJ332	3.3K
R512	ERDS2TJ221	220
R520	ERDS2TJ473	47K
R521	ERDS2TJ102	1K
R522	ERDS2TJ471	470
R523	ERDS2TJ153	15K
R524	ERDS2TJ223	22K
R525	ERDS2TJ101	100
R526	ERDS2TJ273	27K
R527	ERDS2TJ102	1K
R528	ERDS2TJ562	5.6K
R529,530	ERDS2TJ333	33K
R531,532	ERDS2TJ222	2.2K
R533,534	ERDS2TJ104	100K
R535,536	ERDS2TJ153	15K
R537,538	ERDS2TJ181	180
R539,540	ERDS2TJ103	10K
R541,542	ERDS2TJ222	2.2K
R543,544	ERDS2TJ822	8.2K
R545,546	ERDS2TJ223	22K

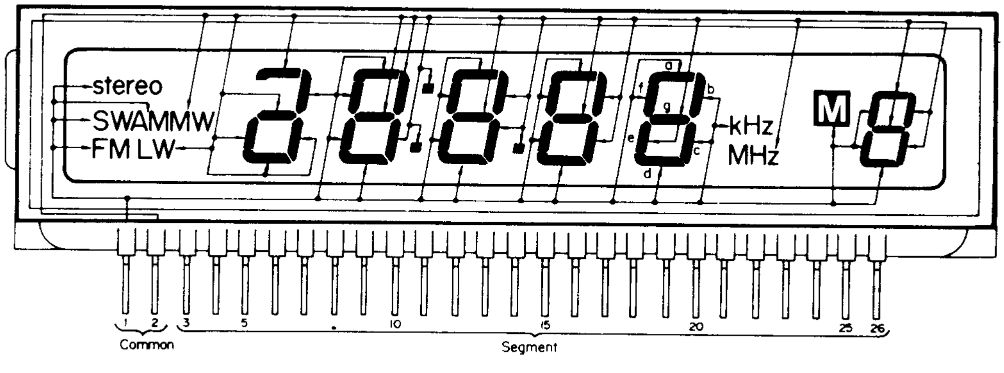
Ref.No.	Part No.	Value
R547,548	ERDS2TJ103	10K
R549	ERDS2TJ471	470
R551,552	ERDS2TJ331	330
R553,554	ERDS2TJ154	150K
R555,556	ERDS2TJ391	390
R557,558	ERDS2TJ682	6.8K
R559,560	ERDS2TJ124	120K
R561,562	ERDS2TJ391	390
R563,564	ERDS2TJ682	6.8K
R565	ERDS2TJ104	100K
R566	ERDS2TJ104	100K
R567,568	ERDS2TJ331	330
R569,570	ERDS2TJ682	6.8K
R571,572	ERDS2TJ104	100K
R573,574	ERDS2TJ331	330
R575,576	ERDS2TJ682	6.8K
R577,578	ERDS2TJ104	100K
R579,580	ERDS2TJ331	330
R581,582	ERDS2TJ682	6.8K
R601,602	ERDS2TJ102	1K
R603,604	ERDS2TJ473	47K
R605,606	ERDS2TJ473	47K
R607,608	ERDS2TJ331	330
R609,610	ERDS2TJ222	2.2K
R611,612	ERDS2TJ272	2.7K
R613	ERDS2TJ102	1K
R614	ERDS2TJ223	22K
R615,616 Ⓢ ⚠	ERX1ANJR22	0.22
R617 Ⓢ ⚠	ERD25FJ221	220
R618	ERDS2TJ102	1K
R619 Ⓢ	ERD25FJ470	47
R620	ERDS2TJ184	180K
R621,622	ERDS2TJ104	100K
R623	ERG1ANJ821	820
R624	ERDS1FJ330	33
R625,626	ERDS2TJ473	47K
R627	ERDS2TJ153	15K
R628 Ⓢ	ERD25FJ470	47
R629,630	ERDS1FJ100	10
R631,632	ERDS1FJ331	330
R633 Ⓢ	ERD25FJ331	330
R702 ⚠	ERDS1FJ332	3.3K
R703 ⚠	ERDS1FJ331	330
R704	ERDS2TJ102	1K
R706 ⚠	ERDS1FJ1R0	1
R707 ⚠	ERX12ANJR33	0.33

- CAPACITORS

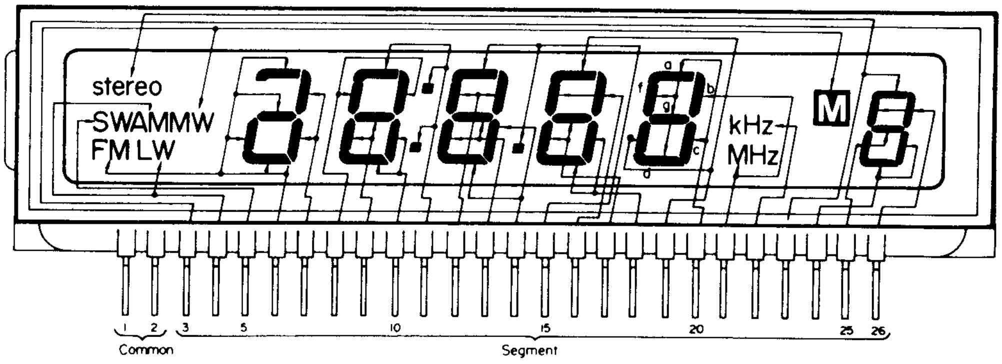
Ref.No.		Part No.	Value
C60		ECEA1AU221	220
C61	Ⓢ	ECEA50MR33R	0.33
C62	Ⓢ	ECEA50ZR1	0.1
C63		ECEA1CU100	10
C64	Ⓢ	ECQM1H473JZ	0.047
C65	Ⓢ	ECQM1H472JZ	0.0047
C66		ECQV05273JC	0.027
C67		ECEA1CU100	10
C68	Ⓢ	ECQM1H562JZ	0.0056
C69,70		ECEA1CU100	10
C71		ECEA1CU3R3	3.3
C72		ECEA1CU220	22
C73		ECEA1HU010	1
C201	Ⓢ	ECCD1H560K	56P
C202	Ⓢ	ECCD1H470K	47P
C203	Ⓢ	ECCD1H100K	10P
C204	Ⓢ	ECKD1H102ZF	0.001
C205,206	Ⓢ	ECKD1H102ZF	0.001
C207	Ⓢ	ECCD1H050CC	5P
C208	Ⓢ	ECCD1H181K	180P
C209,210	Ⓢ	ECCD1H010CC	1P
C211	Ⓢ	ECCD1H100KC	10P
C212	Ⓢ	ECCD1H181K	180P
C213	Ⓢ	ECKD1H103ZF	0.01
C214		ECFD1V103KD	0.01
C215	Ⓢ	ECKD1H102ZF	0.001
C216	Ⓢ	ECCD1H060CC	6P
C217	Ⓢ	ECCD1H220KC	22P
C218	Ⓢ	ECCD1H060CC	6P
C219	Ⓢ	ECCD1H030CC	3P
C220	Ⓢ	ECKD1H102ZF	0.001
C221	Ⓢ	ECKD1H102ZF	0.001
C222		ECFD1V473KD	0.047
C223	Ⓢ	ECCD1H120KC	12P
C224		ECQP1471JZ	470P
C225,226	Ⓢ	ECKD1H103ZF	0.01
C227,228	Ⓢ	ECKD1H103ZF	0.01
C229	Ⓢ	ECCD1H080CC	8P
C230	Ⓢ	ECCD1H470K	47P
C231		ECEA0JU101	100
C232		ECEA1EU4R7	4.7
C233	Ⓢ	ECKD1H103ZF	0.01
C234		ECFD1V183KD	0.018
C235,236	Ⓢ	ECKD1H103ZF	0.01
C237	Ⓢ	ECKD1H221KB	220P
C238		ECEA1CU100	10
C239		ECEA1HUR47	0.47
C240	Ⓢ	ECCD1H150KC	15P
C241		ECEA1HUR47	0.47
C242		ECEA1EU4R7	4.7
C243	Ⓢ	ECKD1H103ZF	0.01
C244		ECFD1V473KD	0.047
C245		ECEA1CU470	47
C246		ECEA1CU100	10
C247,248		ECFD1V183KD	0.018
C249,250		ECEA1HU010	1
C251,252		ECEA1HUR47	0.47
C253		ECQP1471JZ	470P
C254		ECEA1CU100	10
C255		ECEA0JU331	330
C256	Ⓢ	ECKD1H103ZF	0.01
C257	Ⓢ	ECKD1H103ZF	0.01
C258	Ⓢ	ECEA25M4R7R	4.7
C259		ECFD1V103KD	0.01
C260	Ⓢ	ECCD1H470K	47P
C261	Ⓢ	ECCD1H100KC	10P
C263,264	Ⓢ	ECKD1H103ZF	0.01
C265	Ⓢ	ECCD1H100KC	10P
C301,302	Ⓢ	ECKD1H681KB	680P
C303,304	Ⓢ	ECKD1H331KB	330P
C305,306		ECEA0JU101	100
C307,308		ECFR1H822KDY	0.0082
C309,310		ECEA1EU4R7	4.7
C311,312		ECEA1CU100	10
C313,314		ECFD1V123KD	0.012
C315		ECEA1CU470	47
C317,318		ECEA1HU010	1
C319,320	Ⓢ	ECKD1H102ZF	0.001
C321,322		ECEA1EU4R7	4.7
C323		ECEA1HUR47	0.47
C324	Ⓢ	ECKD1H103ZF	0.01
C325,326	Ⓢ	ECKD1H681KB	680P
C327,328	Ⓢ	ECKD1H331KB	330P
C329,330		ECEA0JU101	100
C331,332		ECFR1H822KDY	0.0082
C333,334		ECEA1HU010	1
C335,336		ECFD1V123KD	0.012
C337,338		ECEA1HU010	1
C339,340		ECEA1HU010	1
C341,342		ECEA1CU470	47
C343,344	Ⓢ	ECCD1H121K	120P
C349,350		ECFD1V333KD	0.033
C351,352		ECFD1V333KD	0.033
C353,354	Ⓢ	ECEA50ZR33	0.33
C355,356	Ⓢ	ECEA50ZR33	0.33
C357		ECEA1CU471	470
C358		ECEA1CU470	47
C359		ECEA1EU4R7	4.7
C361,362	Ⓢ	ECKD1H103ZF	0.01
C402		ECEA1CU100	10
C403		ECQP1122JZ	0.0012
C404		ECQP1123JZ	0.012
C405		ECEA1CU470	47
C406	Ⓢ	ECQM1H153JZ	0.015
C407	Ⓢ	ECQM1H562JZ	0.0056
C408	Ⓢ	ECQM1H822JZ	0.0082
C409	Ⓢ	ECQM1H822JZ	0.0082
C410		ECEA1CU221	220
C451		ECEA1HU010	1
C452		ECEA1CU220	22
C453		ECEA1HU0R1	0.1
C454		ECEA1CU220	22
C455	Ⓢ	ECKD1H102ZF	0.001
C503,504		ECFD1V103KD	0.01
C505,506		ECKD1H102ZF	0.001
C507		ECEA1CU470	47
C509	Ⓢ	ECKD1H103ZF	0.01
C510		ECEA1HU2R2	2.2
C511	Ⓢ	ECKD1H102ZF	0.001
C512		ECEA1EU330	33
C513	Ⓢ	ECCD1H470K	47P
C514	Ⓢ	ECCD1H101K	100P
C515		ECEA1HU010	1
C516		ECEA1EU470	47
C517,518		ECEA1EU4R7	4.7
C519,520		ECEA1CU470	47
C521,522		ECEA1CU100	10
C523,524	Ⓢ	ECKD1H331KB	330P
C525,526	Ⓢ	ECCD1H101K	100P
C527,528		ECEA1CU100	10
C529		ECEA1AU101	100
C531,532		ECFD1V473KD	0.047
C533,534		ECEA1HU010	1
C535,536		ECFD1V153KD	0.015
C537,538		ECEA1HUR33	0.33
C539,540	Ⓢ	ECKD1H682KB	0.0068
C541,542		ECEA1HU0R1	0.1
C543,544	Ⓢ	ECKD1H152KB	0.0015
C545,546		ECFD1V473KD	0.047
C547,548	Ⓢ	ECKD1H471KB	470P
C549,550		ECFR1V153KDY	0.015
C561,562	Ⓢ	ECKD1H331KB	330P
C601,602	Ⓢ	ECKD1H331KB	330P
C603,604		ECEA1HU2R2	2.2
C605,606	Ⓢ	ECCD1H101K	100P
C607,608	Ⓢ	ECCD1H050CC	5P
C609,610		ECEA1HU330	33
C611,612		ECEA1HU100	10
C613,614		ECEA1VU470	47
C615		ECEA1VU470	47
C616		ECEA1EU330	33
C617		ECEA1EU330	33
C618		ECEA1CU100	10
C619,620		ECFD1E104MD	0.1
C621,622	Ⓢ	ECCD1H101K	100P
C633	Ⓢ	ECCD1H101K	100P
C701	⚠	ECKDKC103PF2	0.01
C702	⚠	ECKD2H103PE	0.01
C706	Ⓢ	ECKD1H103ZF	0.01
C707,708	Ⓢ	ECKD1H103ZF	0.01
C709		ECKD1H103ZF	0.01
C710	⚠	ECEA1VU332	3300
C711	⚠	ECEA1VU332	3300
C712		ECEA1EU222	2200
C713,714		ECEA1CU101	100
C715		ECEA1CU471	470

■ LIQUID CRISTAL DISPLAY (LCD)

- Common terminal (No. 1, 2)



- Segment terminal (No. 3 ~ 26)



MEASUREMENTS AND ADJUSTMENTS

AM/FM

Control positions and equipment used

- AM and FM signal generator (AM and FM-SG).
- Stereo modulator
- Distortion analyser
- Oscilloscope
- Oscillator
- AC and DC electronic voltmeter (EVM)
- Frequency counter
- Choke coil (100μH)
- Resistor (100kΩ)
- Ceramic capacitor (200pF)
- Test tape OZZCWAT OZZCFM

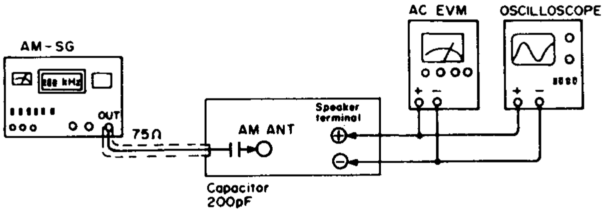
Note: For **T201**(AM-IFT), and **L204** (AM OSC coil), adjusted parts are supplied. So, do not turn the cores of these parts.

AM-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**AM**" position.
3. Place the radio frequency display and signal generator setting to **612kHz.**
4. Adjust **L203** for maximum output.
5. Place the radio frequency display and signal generator setting to **1503kHz.**
6. Adjust **CT202** for maximum output.
7. Repeat steps 3 ~ 8.

Note: Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation 30%
Modulation frequency......... 400 Hz

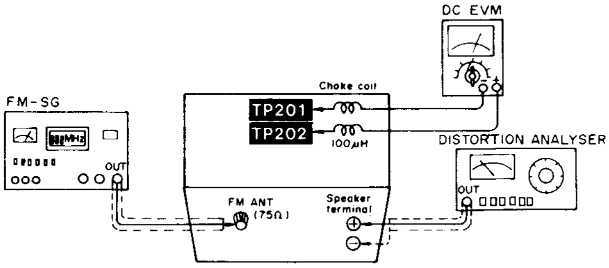

AC EVM
OSCILLOSCOPE
AM-SG
kHz
OUT
75Ω
AM ANT
Speaker terminal
⊕
⊖
Capacitor 200pF

FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" position.
3. Place the radio frequency display and signal generator setting to **100.10 MHz**.
4. Adjust **T203** core so that voltage measured in signal mode is **0 mV (0 ± 30 mV)** in 300 mV range.
5. Adjust **T204** so that the distortion factor of L ch is minimized.
6. Repeat steps 4 and 5 a few times.
7. Make sure that the distortion factors of L ch and R ch are nearly the same with each other.

Note: The adjusting screwdriver used should be made of resin.

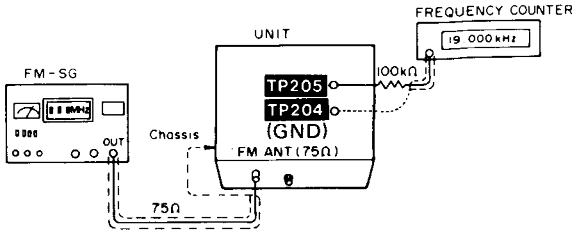
FM SIGNAL GENERATOR CONDITION
Modulation........................... 100%
Modulation frequency.......... 400 Hz
Output level......................... 66 dB


DC EVM
FM-SG
MHz
OUT
Choke coil
TP201
TP202
100μH
DISTORTION ANALYSER
OUT
FM ANT (75Ω)
Speaker terminal
⊕
⊖

FM STEREO ADJUSTMENT (FREE RUN)

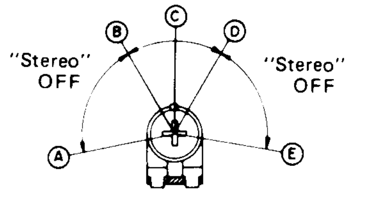
1. Test equipment connection is shown in figure.
2. Set the unit into "**FM auto**" position. (by FM mode select button).
3. Place the radio frequency display and signal generator settint to **100.10 MHz.**
4. Adjust **VR201** for **19 kHz ± 30 Hz** on frequency counter reading.

FM SIGNAL GENERATOR CONDITION
Modulation 0
Modulation frequency.......... 0
Output level......................... 66 dB


FREQUENCY COUNTER
19 000 kHz
UNIT
FM-SG
MHz
OUT
100kΩ
TP205
TP204
(GND)
Chassis
FM ANT (75Ω)
75Ω

USING ALTERNATE SYSTEM

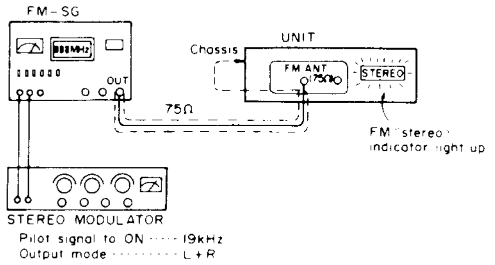
1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust **VR201** until stereo indicator light up. Cement arm of **VR201** as shown figure.


"Stereo" OFF
"Stereo" OFF
Ⓐ
Ⓑ
Ⓒ
Ⓓ
Ⓔ

VR201

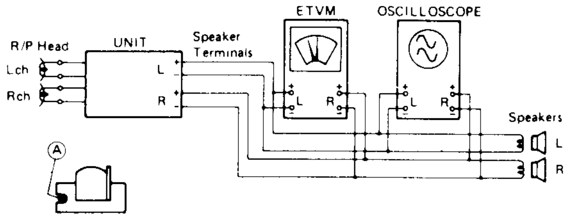
Ⓐ – Ⓑ, Ⓓ – Ⓔ.... "Stereo" OFF position
Ⓑ – Ⓓ............ "Stereo" ON position (Indicator lighting)
Ⓒ................ Adjust point of pilot circuit

FM SIGNAL GENERATOR CONDITION
Modulation.......................... 10%
Modulation frequency......... Pilot (19 kHz)
Output level......................... 66 dB


FM-SG
OUT
Chassis
UNIT
FM ANT (75Ω)
STEREO
75Ω
FM "stereo" indicator light up
STEREO MODULATOR
Pilot signal to ON ····· 19kHz
Output mode ············ L+R

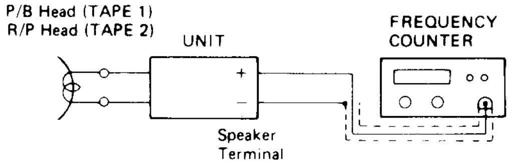
HEAD AZIMUTH ADJUSTMENT (Tape1/Tape2)

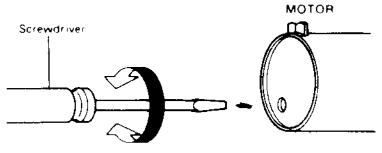
1. Test equipment connection is shown in figure.
2. Playback test tape **QZZCFM** (8kHz).
3. Adjust screw **A** for maximum indication for equal output on both channels.
4. After adjustment, lock the head adjust screw **A** with lacguer.


R/P Head
Lch
Rch
UNIT
L
R
Speaker Terminals
ETVM
OSCILLOSCOPE
Speakers
L
R
Ⓐ

TAPE MOTOR SPEED ADJUSTMENT (Tape1/Tape2)

1. Test equipment connection is shown in figure.
2. Playback test tape **QZZCWAT** (3kHz).
3. Adjust the VR at the rear of the motor (Refer Fig.1) for **2970Hz**(2920～3000Hz)with the Tape 1.
4. Adjust the VR at the rear of the motor (Refer Fig.1) for **2950 Hz** (2920～3000Hz) with the Tape 2.


P/B Head (TAPE 1)
R/P Head (TAPE 2)
UNIT
Speaker Terminal
FREQUENCY COUNTER

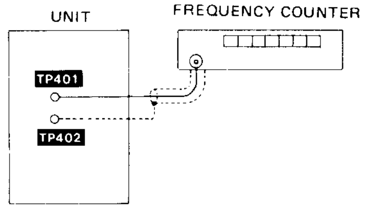

Screwdriver
MOTOR

(Fig. 1)

Note: Adjust the Tape1 motor for −10 ～ +30Hz higher than Tape2.

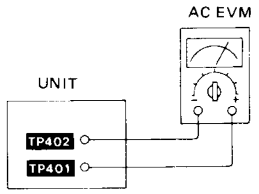
BIAS OSCILLATION ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure.
2. Place unit into **TAPE** position.
3. Place cassette deck into **REC** mode and select, beat proof switch to **B** position.
4. Adjust **L401** for **85kHz±3kHz** on frequency counter reading.


UNIT
FREQUENCY COUNTER
TP401
TP402

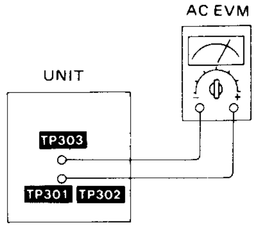
ERASE CURRENT ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure.
2. Place unit into **TAPE** position.
3. Place cassette deck into **REC** mode and tape selector into **Metal** tape mode
4. Adjust **VR403** for **155±5mV** on AC electronic voltmeter (AC EVM)


AC EVM
UNIT
TP402
TP401

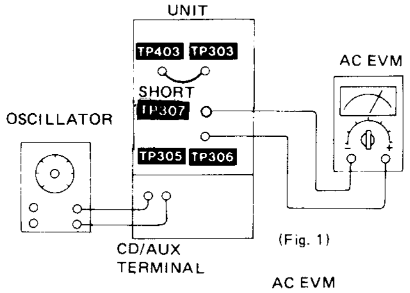
RECORDING BIAS ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure.
2. place unit into **TAPE** position.
3. Place cassette deck into **REC** mode and tape selector into **Normal** tape mode.
4. Adjust **VR401** (Lch) and **VR402** (Rch) for **4.4±0.1mV**on AC electronic voltmeter (AC EVM)

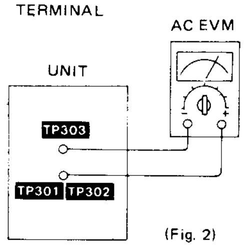

AC EVM
UNIT
TP303
TP301
TP302

RECORDING CURRENT ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure. (Fig.1)
2. Place unit into **CD/AUX** position and cassette deck into **STOP** mode.
3. Short-circuit the test points **TP403** and **TP303**.
4. Place cassette deck into **REC** mode.
5. Supply AF cscillator signal (1 kHz) into CD/AUX position and adjust the input level to get **410+10mV** on AC electronic voltmeter (AC EVM).
6. Test equipment connection is shown in figure.(Fig.2)
7. Place cassette deck into **REC** mode and tape selector into **Normal** tape mode.
8. Adjust **VR305** (Lch) and **VR306** (Rch) for **0.42±0.01mV** on AC electronic voltmeter (AC EVM).


UNIT
TP403
TP303
SHORT
TP307
TP305
TP306
OSCILLATOR
AC EVM
CD/AUX TERMINAL

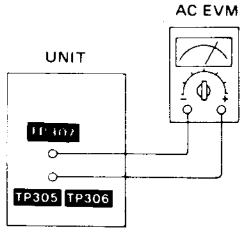
(Fig. 1)


AC EVM
UNIT
TP303
TP301
TP302

(Fig. 2)

PLAYBACK GAIN ADJUSTMENT (Tape1/Tape2)

1. Test equipment connection is shown in figure.
2. Playback test tape **QZZCFM** (315kHz).
3. Adjust **VR301, 302** (tape1) and **VR303, 304** (tape2) for **410±10mV** on AC electronic voltmeter (AC EVM).


AC EVM
UNIT
TP307
TP305
TP306

tion
on
ot circuit

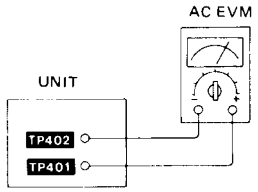
Speakers
L
R

NCY
R

R

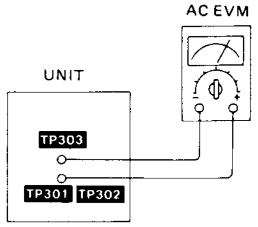
ERASE CURRENT ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure.
2. Place unit into **TAPE** position.
3. Place cassette deck into **REC** mode and tape selector into **Metal** tape mode
4. Adjust **VR403** for **155±5mV** on AC electronic voltmeter (AC EVM)


AC EVM
UNIT
TP402
TP401

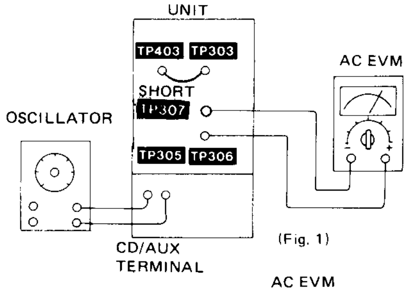
RECORDING BIAS ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure.
2. place unit into **TAPE** position.
3. Place cassette deck into **REC** mode and tape selector into **Normal** tape mode.
4. Adjust **VR401** (Lch) and **VR402** (Rch) for **4.4±0.1mV**on AC electronic voltmeter (AC EVM)

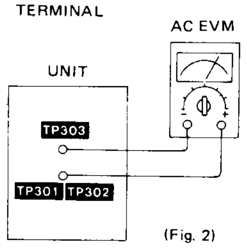

AC EVM
UNIT
TP303
TP301
TP302

RECORDING CURRENT ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure. (Fig.1)
2. Place unit into **CD/AUX** position and cassette deck into **STOP** mode.
3. Short-circuit the test points **TP403** and **TP303**.
4. Place cassette deck into **REC** mode.
5. Supply AF cscillator signal (1 kHz) into CD/AUX position and adjust the input level to get **410+10mV** on AC electronic voltmeter (AC EVM).
6. Test equipment connection is shown in figure.(Fig.2)
7. Place cassette deck into **REC** mode and tape selector into **Normal** tape mode.
8. Adjust **VR305** (Lch) and **VR306** (Rch) for **0.42±0.01mV** on AC electronic voltmeter (AC EVM).


UNIT
TP403
TP303
SHORT
TP307
TP305
TP306
OSCILLATOR
AC EVM
CD/AUX TERMINAL

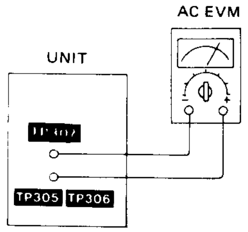
(Fig. 1)


AC EVM
UNIT
TP303
TP301
TP302

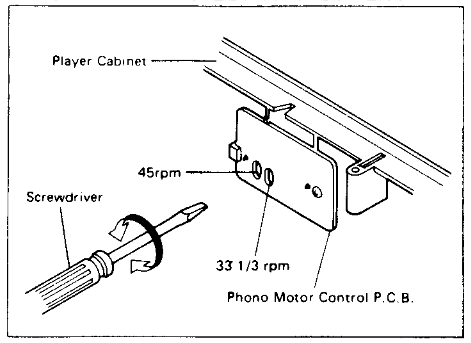
(Fig. 2)

PLAYBACK GAIN ADJUSTMENT (Tape1/Tape2)

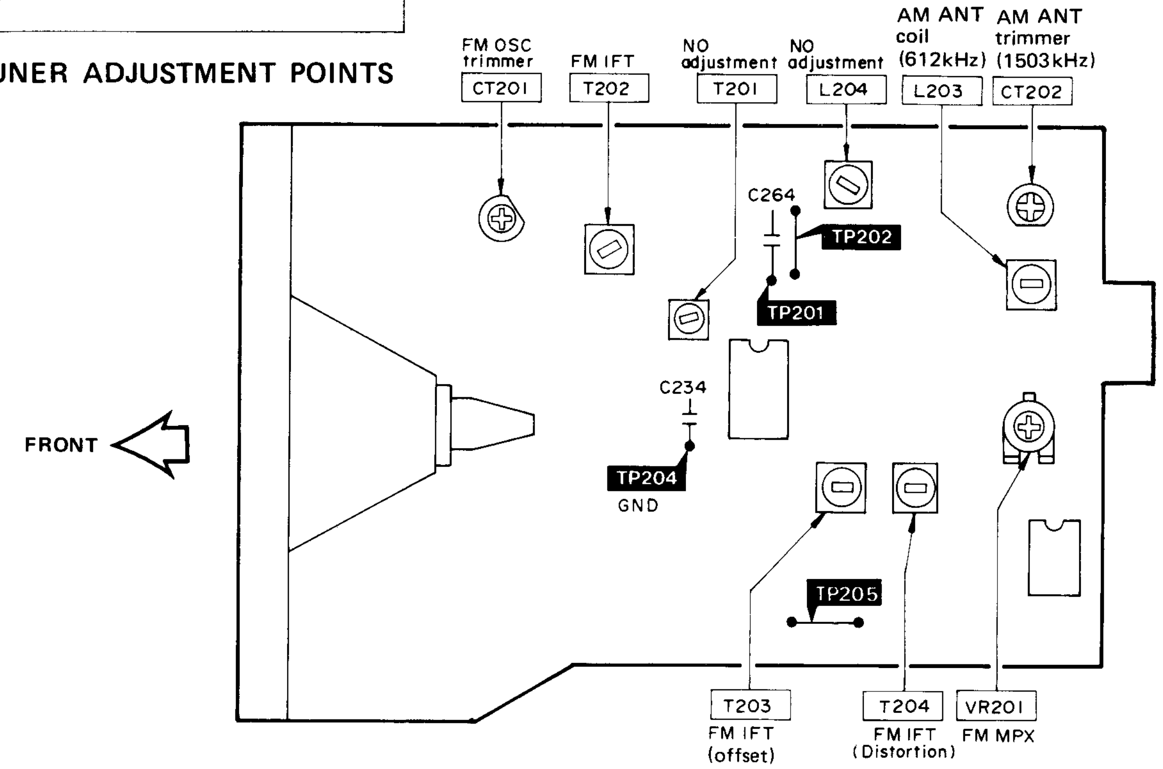
1. Test equipment connection is shown in figure.
2. Playback test tape **QZZCFM** (315kHz).
3. Adjust **VR301, 302** (tape1) and **VR303, 304** (tape2) for **410±10mV** on AC electronic voltmeter (AC EVM).


AC EVM
UNIT
TP305
TP306

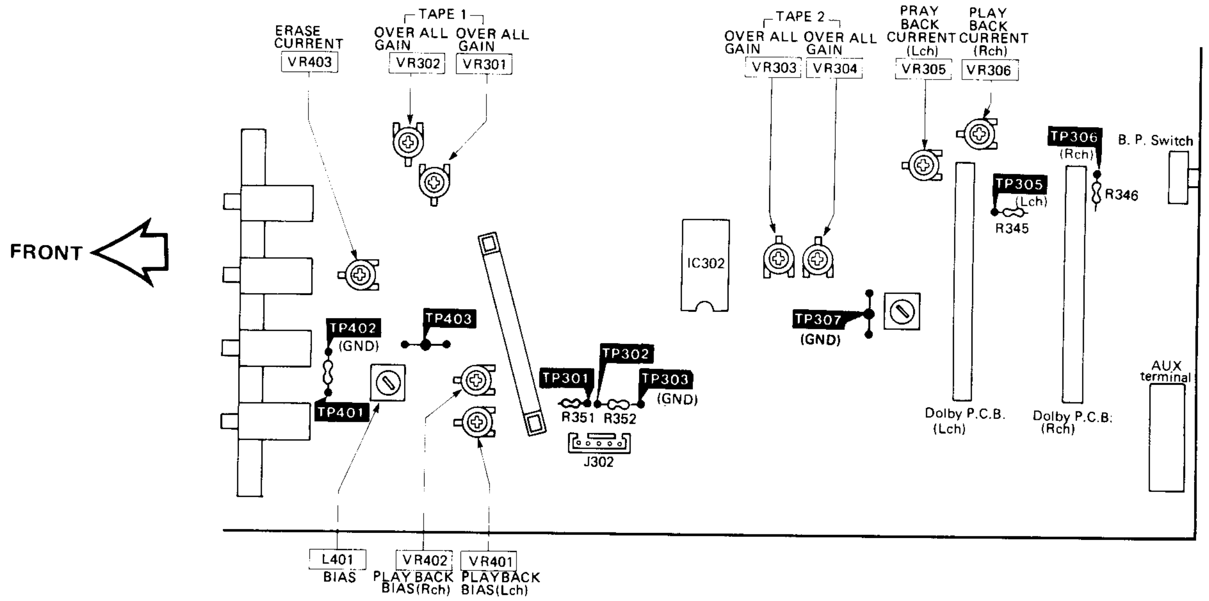
- **PHONO MOTOR SPEED ADJUSTMENT**


Player Cabinet
45rpm
Screwdriver
33 1/3 rpm
Phono Motor Control P.C.B.

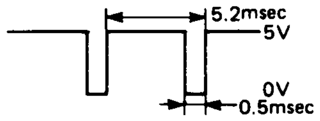
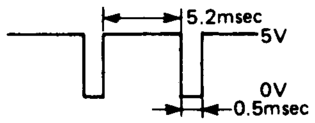
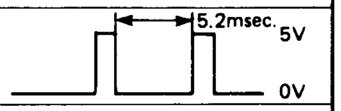
- **TUNER ADJUSTMENT POINTS**


FM OSC trimmer
CT201
FM IFT
T202
NO adjustment
T201
NO adjustment
L204
AM ANT coil (612kHz)
L203
AM ANT trimmer (1503kHz)
CT202
C264
TP202
TP201
C234
FRONT
TP204
GND
TP205
T203
FM IFT (offset)
T204
FM IFT (Distortion)
VR201
FM MPX

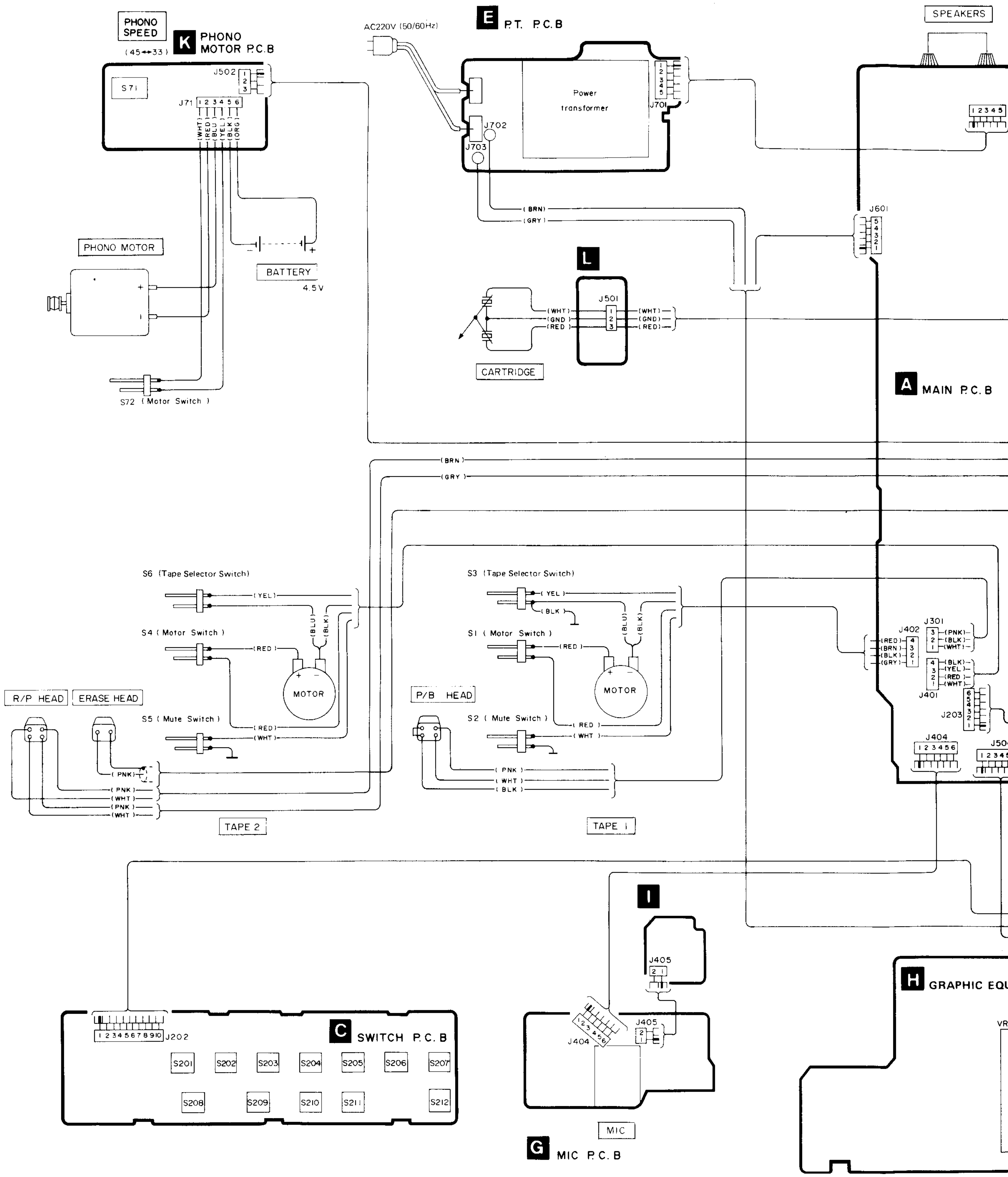
- **CASSETTE DECK ADJUSTMENT POINTS**


ERASE CURRENT
VR403
TAPE 1
OVER ALL GAIN
VR302
OVER ALL GAIN
VR301
TAPE 2
OVER ALL GAIN
VR303
OVER ALL GAIN
VR304
PRAY BACK CURRENT (Lch)
VR305
PLAY BACK CURRENT (Rch)
VR306
TP306 (Rch)
B. P. Switch
TP305 (Lch)
R345
R346
FRONT
IC302
TP402 (GND)
TP403
TP401
TP307 (GND)
TP301
TP302
TP303 (GND)
R351
R352
J302
Dolby P.C.B. (Lch)
Dolby P.C.B. (Rch)
AUX terminal
L401
BIAS
VR402
PLAY BACK BIAS(Rch)
VR401
PLAYBACK BIAS(Lch)

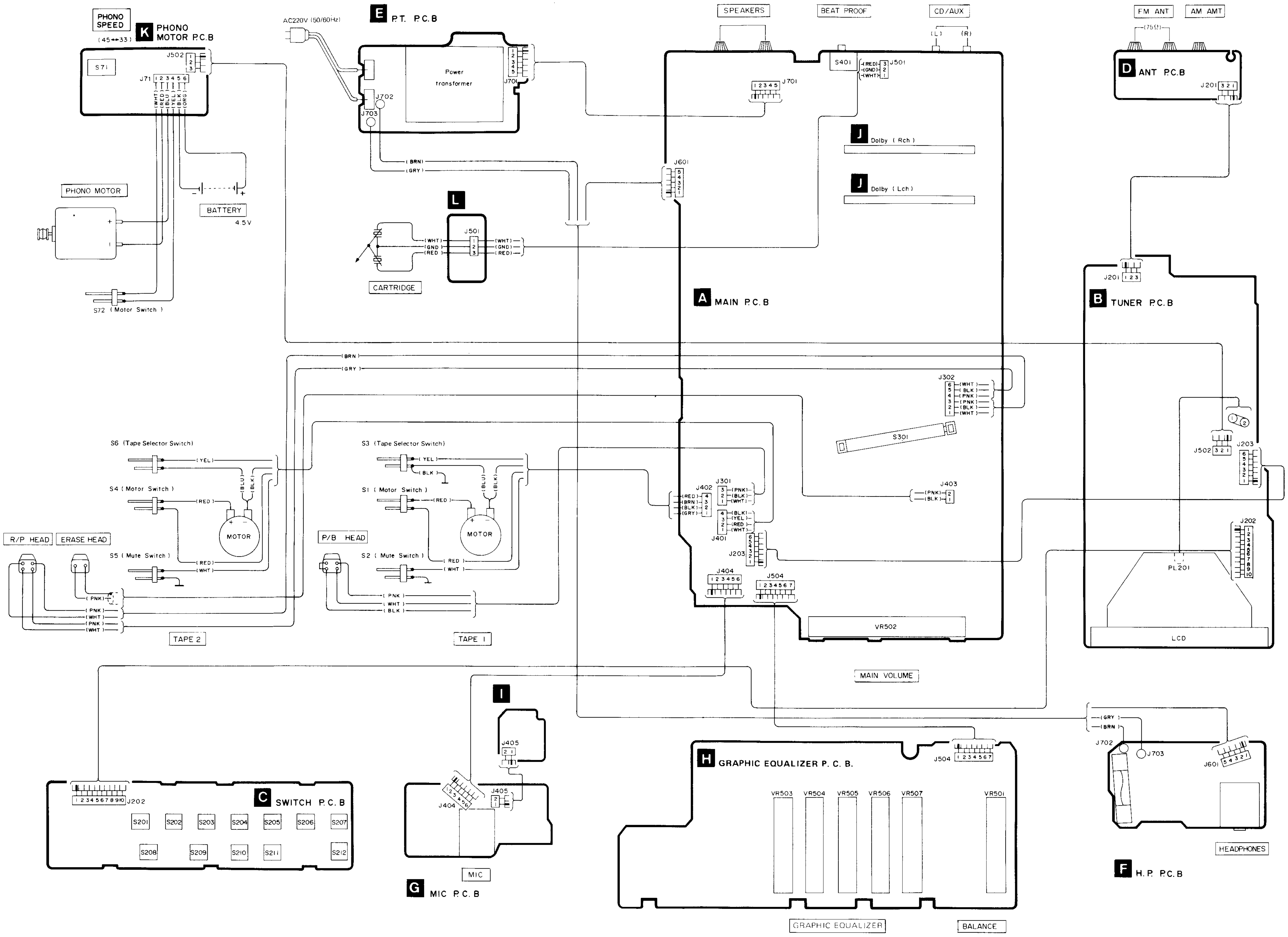
FUNCTION OF TERMINAL (PLL CONTROLLER IC 203)

Pin No.	Mark	Description of terminal
1 ∫ 4 34 ∫ 52	LCD4 ∫ LCD1 LCD23 ∫ LCD5	Segment signal output terminal for display.
5	COM2	Common signal output terminal connected to LCD. Output is delivered in 3 values of earth, 1/2VDD and VDD (at 5 ms intervals) in a period of 50 Hz. The segment turns ON when the difference in voltage is ± VDD between these terminals and LCD1 ~ LCD23.
6	COM1	
8	FM	Input is local oscillation output (VCO) in a range of 10 ~ 130 MHz (0.3Vp-p, min.). There are 1/2 fixed frequency division prescaler and 2-step (1/32, 1/33) prescaler internally. Therefore, when deciding the frequency dividing value of programmable divider, it must be decided from the frequency obtained by halving the local oscillation output (VCO).
9	AM	Input is local oscillation output (VCO) in a range of 0.5 ~ 20 MHz (0.1Vp-p, min.). When the mode is shifted to FM, the AM terminal voltage automatically becomes the supply voltage of device.
10	GND	Ground terminal.
11	E01	When the divided oscillation frequency is higher than the standard frequency, H-level output is delivered from these terminals. When it is lower, L-level (0V) output is delivered. When they coincide, it results in floating.
12	E02	
13	CE	Device selection signal input terminal. The signal level should be high when the device is operated, and low when not operated. With this terminal shifted to low level, LCD (liquid crystal display) turns off and the memory is held.
14	NC	Not used in this unit.
15	X1	Connecting terminal for crystal oscillator. The crystal connected is at 4.5 MHz.
16	X2	
17	A3 (SD)	Terminal to put in stop signal during auto tuning. The voltage is 5V with broadcast received, and 0V without broadcast received.
18	A2	Not used in this unit.
19	A1	FM/AM output terminal. (FM ⟶ 5V, AM ⟶ 0V)
20	A0	Auto/mono changeover output terminal. (auto ⟶ 0V, mono ⟶ 5V)
21 ∫ 24	K3 ∫ K0	Input terminal for key return signal from external key matrix.  5.2msec 5V 0V 0.5msec
25 ∫ 28	B3 ∫ B0	Input terminal for key return signal from external key matrix.  5.2msec 5V 0V 0.5msec
29	C3	Output terminal for key return signal to let the stereo indicator light up.  5.2msec. 5V 0V
30	C2	AF output signal detection terminal. When AF output is higher than AC 2V, Q904 turns ON and key return signal is put into No. 24 pin.
31	C1	FM/AM output terminal (FM ⟶ 0V, AM ⟶ 0V).
32	C0	Muting signal output terminal. Muting signal is put out during operation of FM/AM selector switch and tuning switch. (4V during muting)
33	VDD	Power supply terminal of device. Voltage of 5V ± 10% is supplied during operation of device. To hold the internal data memory (RAM), the voltage can be decreased to 2.5V. **Note:** Pins 7 and 33 are connected inside the chip. So, it is unnecessary to supply voltage to the pins.

WIRING CONNECTION DIAGRAM

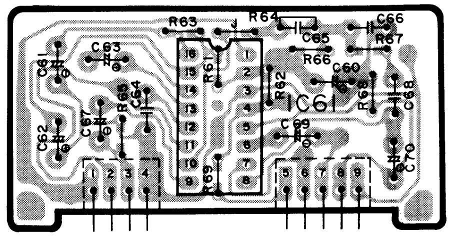

PHONO SPEED
(45⟷33)
K PHONO MOTOR P.C.B
S71
J502
J71
S72 (Motor Switch)
PHONO MOTOR
BATTERY
4.5V
AC220V (50/60Hz)
E P.T. P.C.B
Power transformer
J701
J702
J703
(BRN)
(GRY)
SPEAKERS
J601
L
J501
(WHT)
(GND)
(RED)
CARTRIDGE
A MAIN P.C.B
S6 (Tape Selector Switch)
S4 (Motor Switch)
S5 (Mute Switch)
S3 (Tape Selector Switch)
S1 (Motor Switch)
S2 (Mute Switch)
MOTOR
MOTOR
(YEL)
(BLU)
(BLK)
(RED)
(WHT)
(PNK)
R/P HEAD
ERASE HEAD
P/B HEAD
TAPE 2
TAPE 1
J402
J301
J401
J203
J404
J50
I
J405
J404
C SWITCH P.C.B
J202
S201
S202
S203
S204
S205
S206
S207
S208
S209
S210
S211
S212
MIC
G MIC P.C.B
H GRAPHIC EQU

■ WIRING CONNECTION DIAGRAM

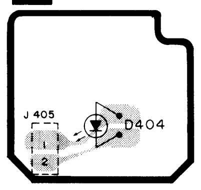

PHONO SPEED
(45↔33)
K PHONO MOTOR P.C.B
J502
S71
J71
(WHT) (RED) (BLU) (YEL) (BLK) (ORG)
PHONO MOTOR
BATTERY
4.5V
S72 (Motor Switch)
AC220V (50/60Hz)
E P.T. P.C.B
Power transformer
J701
J702
J703
(BRN)
(GRY)
L
J501
(WHT) (GND) (RED)
CARTRIDGE
SPEAKERS
BEAT PROOF
CD/AUX
(L) (R)
S401
J501
J701
J601
J Dolby (Rch)
J Dolby (Lch)
A MAIN P.C.B
FM ANT
AM AMT
(75Ω)
D ANT P.C.B
J201
B TUNER P.C.B
J302
S301
J403
J402
J301
J401
J203
J404
J504
VR502
MAIN VOLUME
J502
J203
J202
PL201
LCD
S6 (Tape Selector Switch)
S4 (Motor Switch)
S5 (Mute Switch)
MOTOR
R/P HEAD
ERASE HEAD
TAPE 2
S3 (Tape Selector Switch)
S1 (Motor Switch)
S2 (Mute Switch)
P/B HEAD
TAPE 1
(YEL) (BLK) (BLU) (RED) (WHT) (PNK) (GRY) (BRN)
C SWITCH P.C.B
J202
S201 S202 S203 S204 S205 S206 S207
S208 S209 S210 S211 S212
I
J405
J404
MIC
G MIC P.C.B
H GRAPHIC EQUALIZER P.C.B.
J504
VR503 VR504 VR505 VR506 VR507 VR501
GRAPHIC EQUALIZER
BALANCE
J702
J703
J601
HEADPHONES
F H.P. P.C.B

■ PRINTED CIRCUIT BOARDS

J DOLBY P.C.B

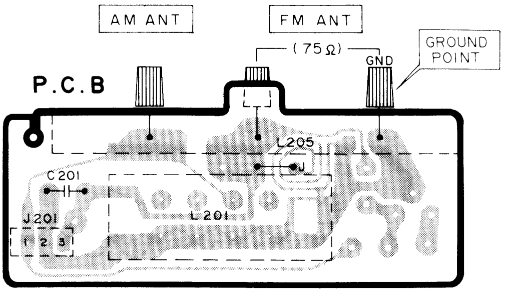


I

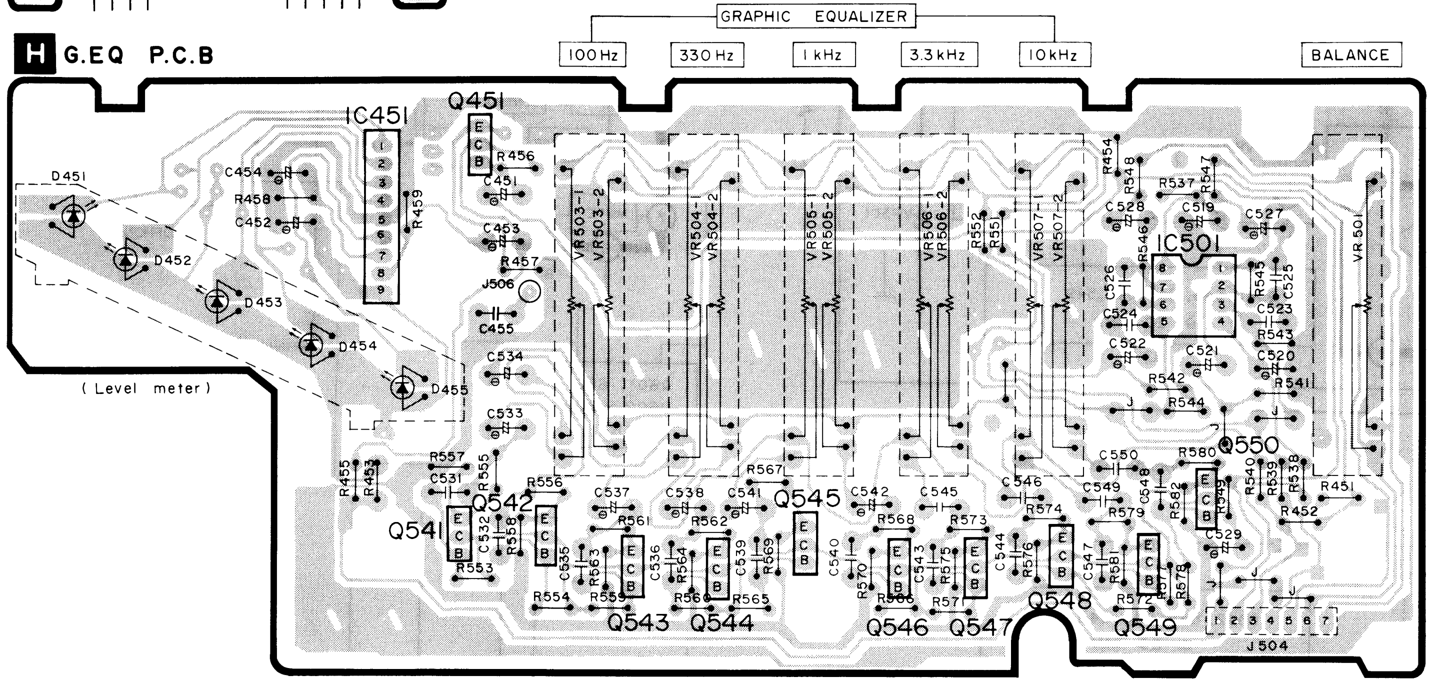


(Dubbing ind.)

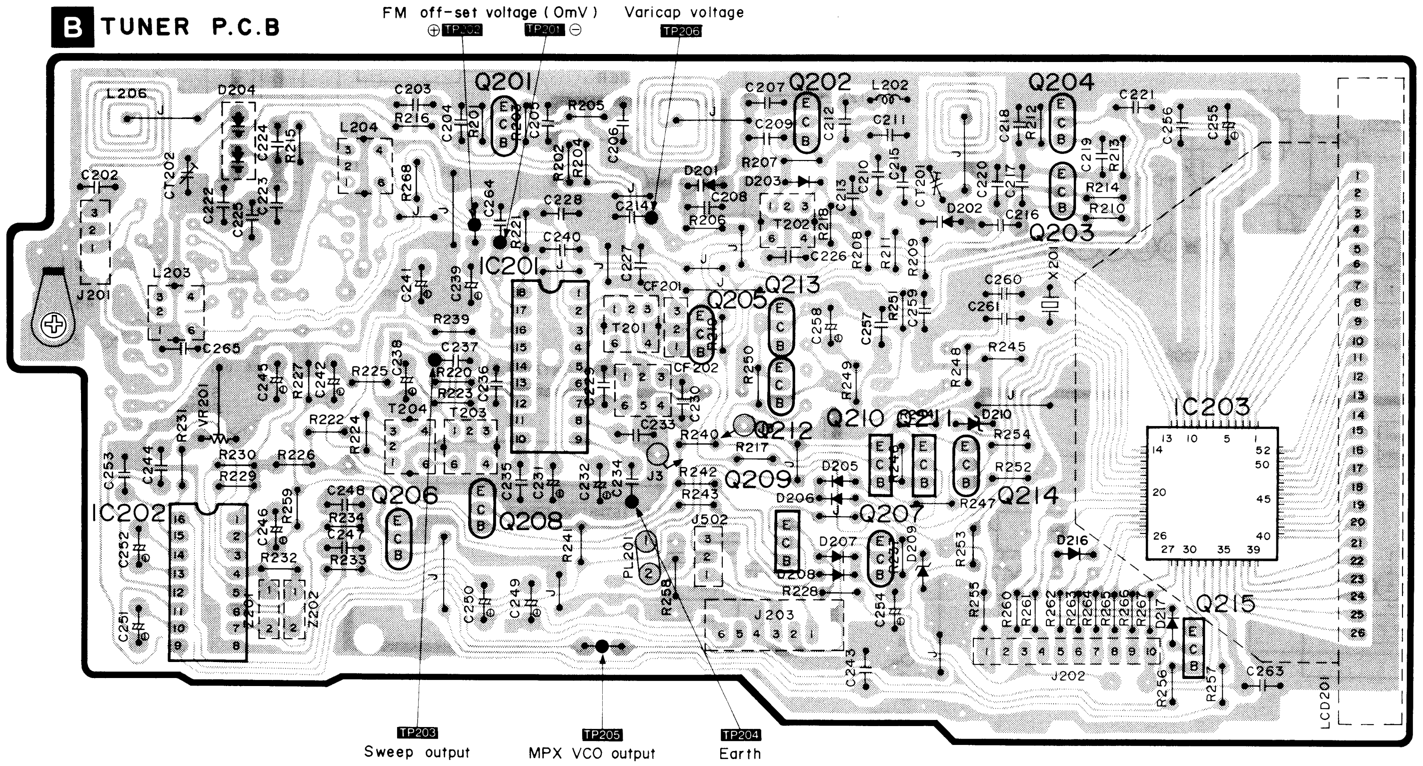
D ANT P.C.B


AM ANT
FM ANT
(75Ω)
GND
GROUND POINT
L205
L201
C201
J201

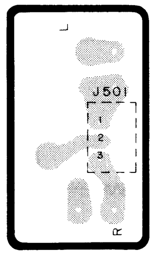
H G.EQ P.C.B


GRAPHIC EQUALIZER
100Hz
330Hz
1kHz
3.3kHz
10kHz
BALANCE
IC451
Q451
D451
D452
D453
D454
D455
(Level meter)
VR503-1
VR503-2
VR504-1
VR504-2
VR505-1
VR505-2
VR506-1
VR506-2
VR507-1
VR507-2
VR501
IC501
Q550
Q541
Q542
Q543
Q544
Q545
Q546
Q547
Q548
Q549
J504
J506

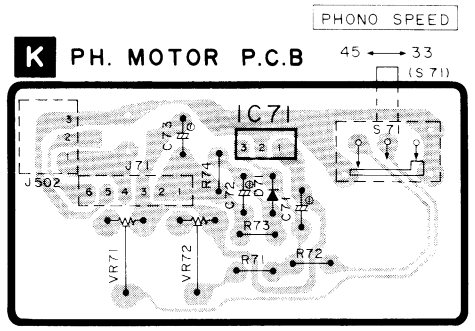
B TUNER P.C.B


FM off-set voltage (0mV)
⊕TP202 TP201⊖
Varicap voltage
TP206
IC201
IC202
IC203
Q201
Q202
Q203
Q204
Q205
Q206
Q207
Q208
Q209
Q210
Q211
Q212
Q213
Q214
Q215
J201
J202
J203
J502
LCD201
TP203
Sweep output
TP205
MPX VCO output
TP204
Earth

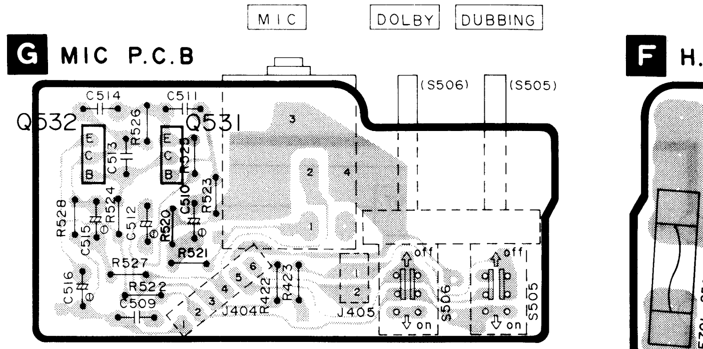
L



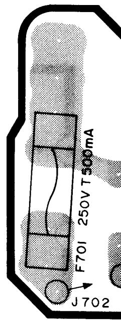
K PH. MOTOR P.C.B


PHONO SPEED
45 ←→ 33
(S71)
IC71
J502
J71
S71
VR71
VR72

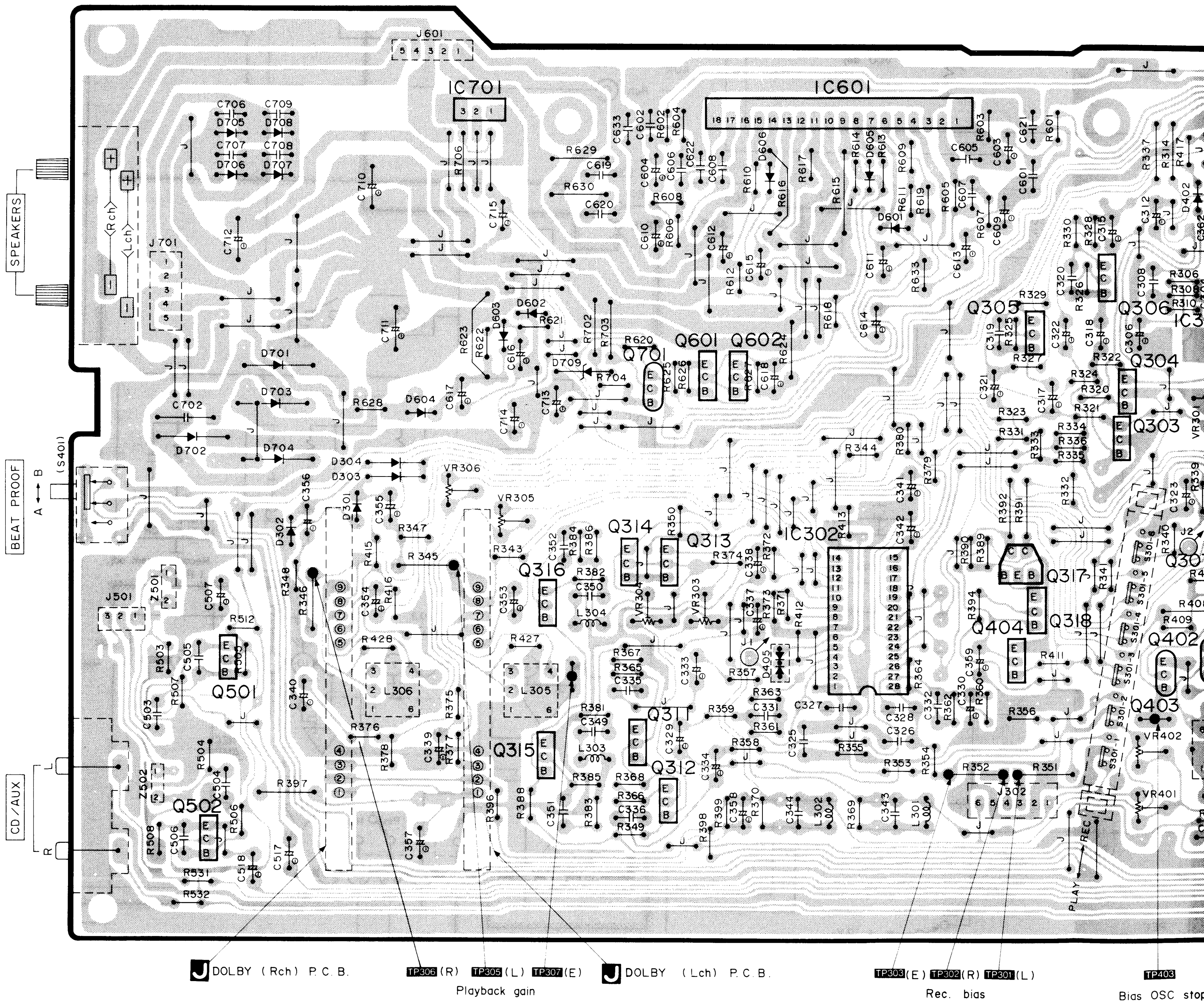
G MIC P.C.B

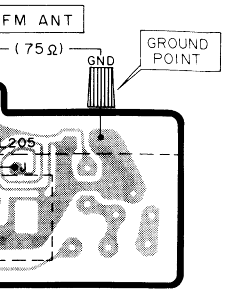

MIC
DOLBY
DUBBING
(S506)
(S505)
Q532
Q531
J404
J405
S506
S505
off
on

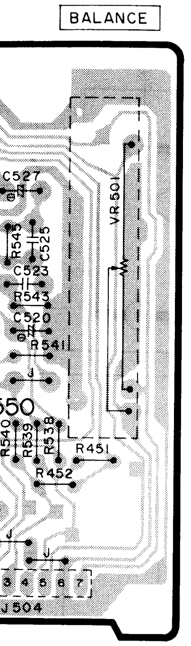
F H.P

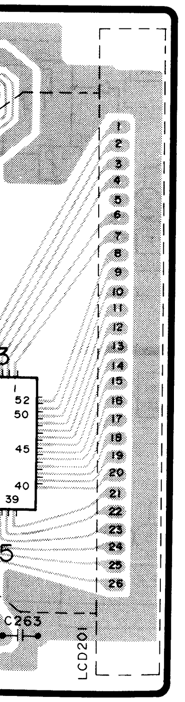

F701 250V T500mA
J702

A MAIN P.C.B

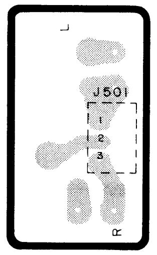

SPEAKERS
(Rch)
(Lch)
BEAT PROOF
A ←→ B
(S401)
CD/AUX
L
R
J601
J701
J501
IC701
IC601
IC302
Q701
Q601
Q602
Q303
Q304
Q305
Q306
Q311
Q312
Q313
Q314
Q315
Q316
Q317
Q318
Q402
Q403
Q404
Q501
Q502
J302
PLAY
REC
J DOLBY (Rch) P.C.B.
TP306(R) TP305(L) TP307(E)
Playback gain
J DOLBY (Lch) P.C.B.
TP303(E) TP302(R) TP301(L)
Rec. bias
TP403
Bias OSC stop


FM ANT
(75Ω)
GND
GROUND POINT
L205

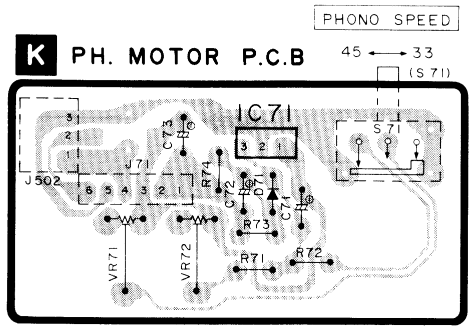

BALANCE
VR501
C527
C525
R543
R541
R540
R539
R538
R451
R452
J504


LCD201
C263

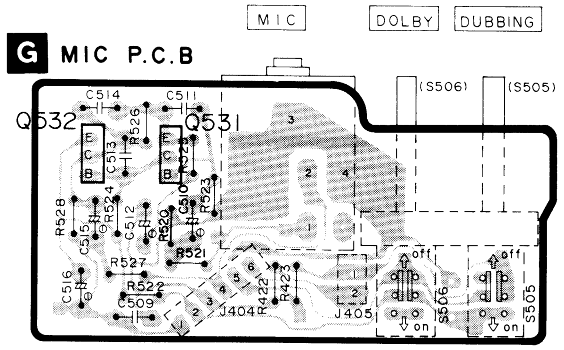
L



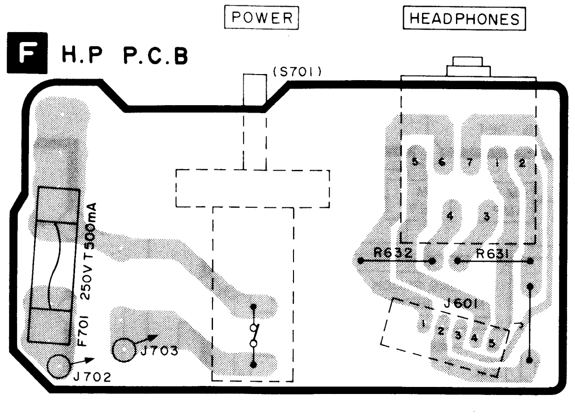
K PH. MOTOR P.C.B


PHONO SPEED
45 ←→ 33
(S71)
IC71
J71
J502
C73
C72
D71
C71
R74
R73
R71
R72
VR71
VR72

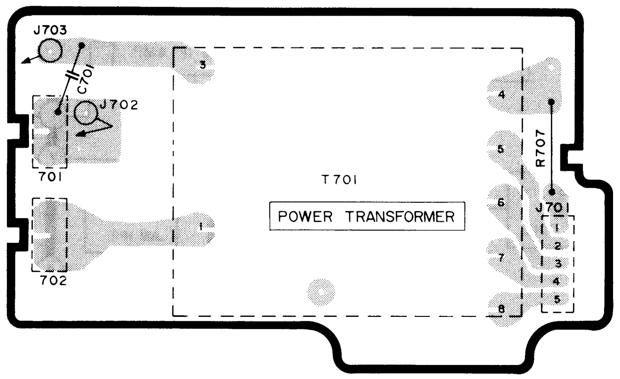
G MIC P.C.B


MIC
DOLBY
DUBBING
(S506)
(S505)
Q532
Q531
C514
C511
R526
R524
R523
R528
C513
C512
C510
R520
R521
R522
R527
C515
C516
C509
J404
R422
R423
J405
S506
S505
off
on

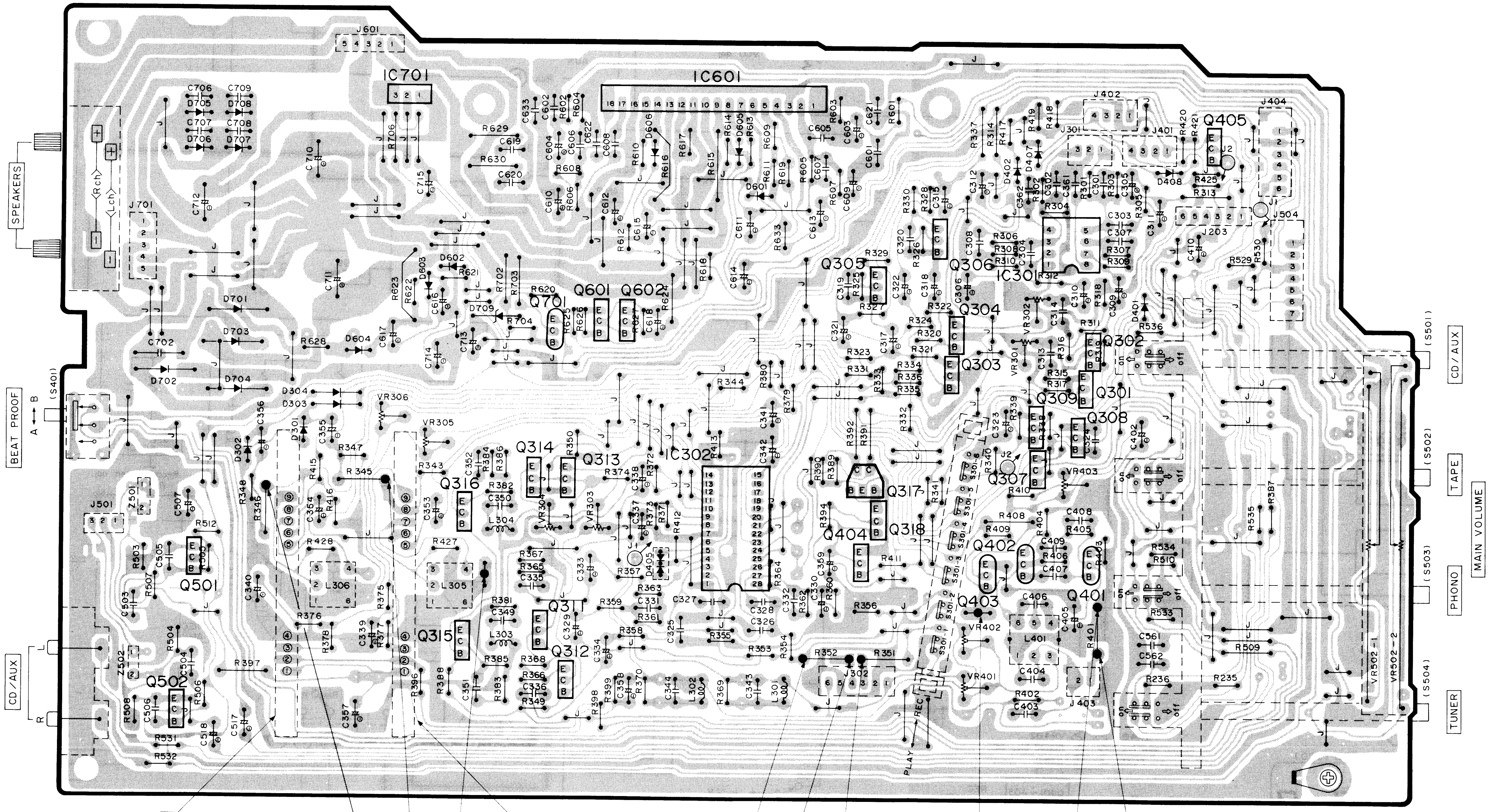
F H.P P.C.B


POWER
HEADPHONES
(S701)
F701 250V T500mA
J703
J702
R632
R631
J601

E P.T P.C.B


J703
C701
J702
701
702
T701
POWER TRANSFORMER
R707
J701

A MAIN P.C.B


SPEAKERS
Rch
Lch
BEAT PROOF
A ←→ B
(S401)
CD/AUX
L
R
J601
IC701
IC601
J701
J501
Q501
Q502
Q701
Q601
Q602
IC302
IC301
Q301
Q302
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q311
Q312
Q313
Q314
Q315
Q316
Q317
Q318
Q401
Q402
Q403
Q404
Q405
J402
J404
J301
J401
J203
J504
J302
J403
L301
L303
L304
L305
L306
L401
VR301
VR302
VR303
VR304
VR305
VR306
VR401
VR402
VR403
VR502-1
VR502-2
(S501)
CD/AUX
(S502)
TAPE
(S503)
PHONO
(S504)
TUNER
MAIN VOLUME
PLAY
REC

J DOLBY (Rch) P.C.B.

TP306 (R) TP305 (L) TP307 (E)
Playback gain

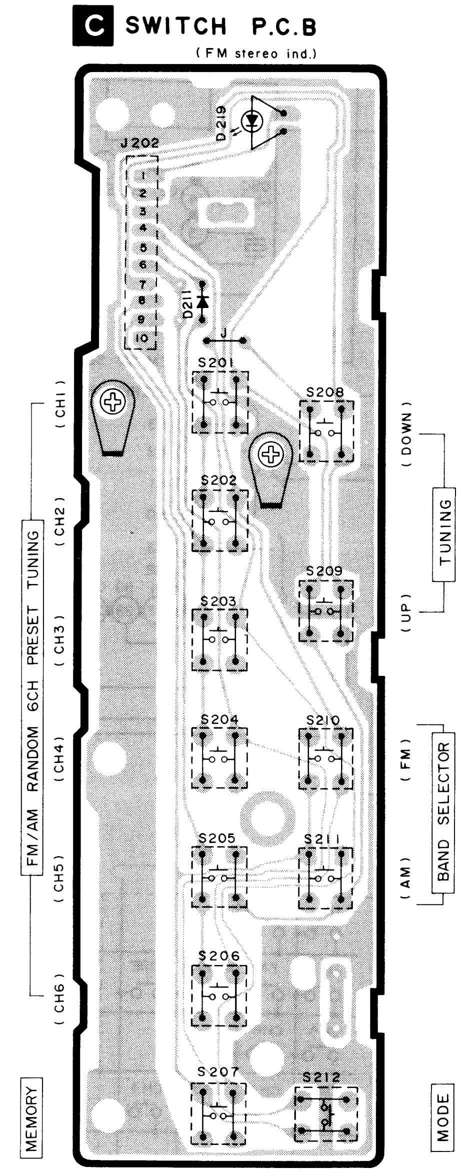
J DOLBY (Lch) P.C.B.

TP303 (E) TP302 (R) TP301 (L)
Rec. bias

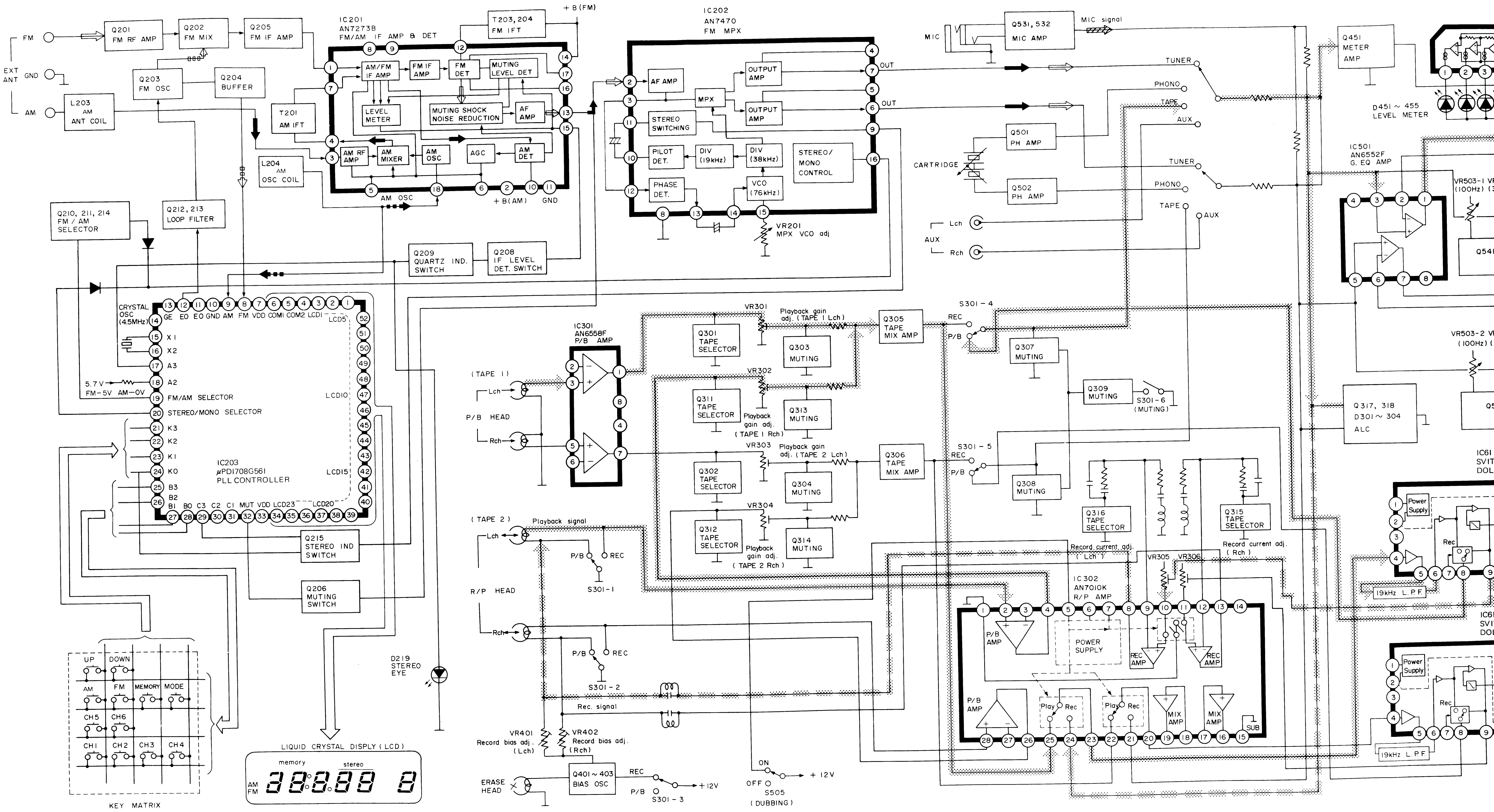
TP403
Bias OSC stop

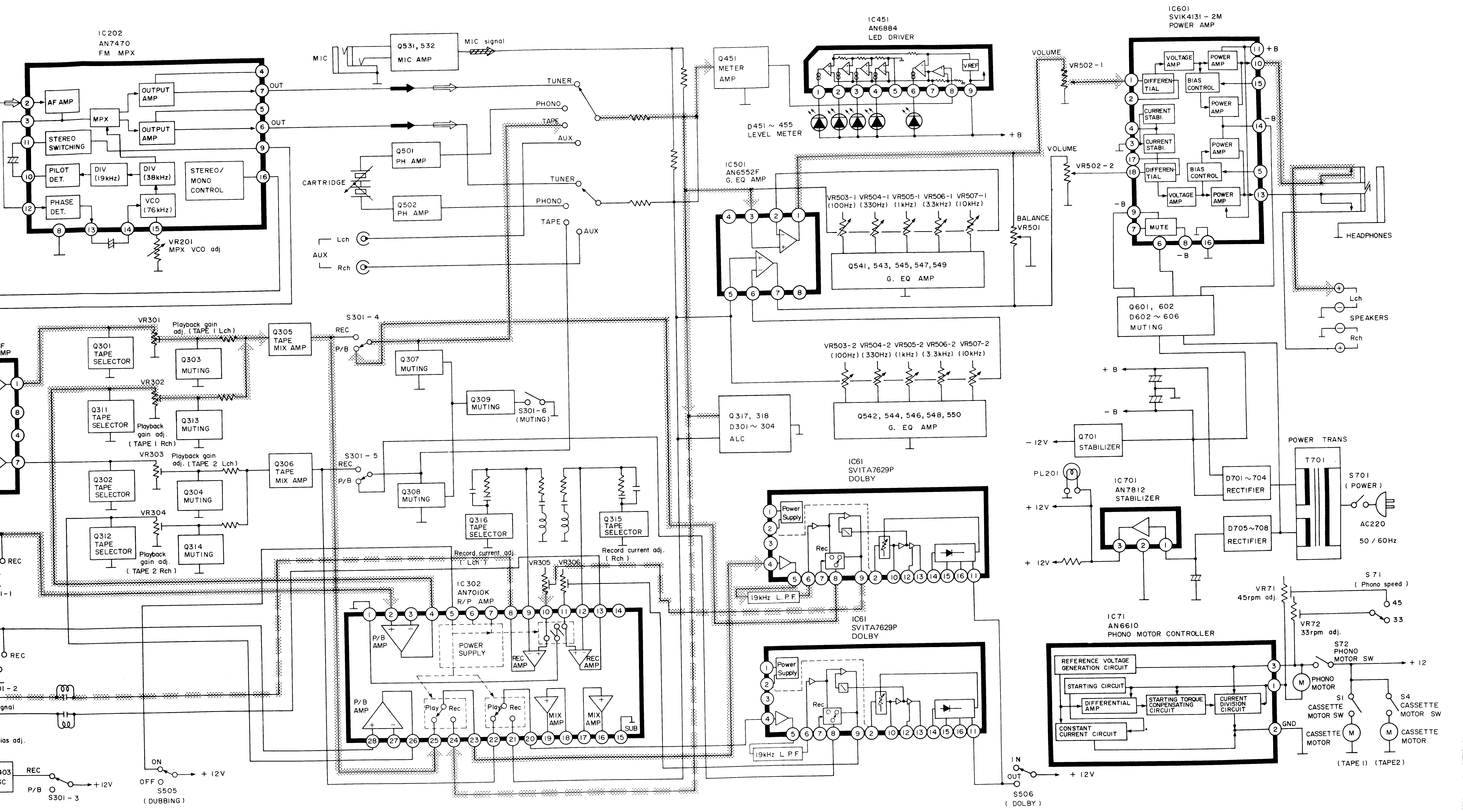
⊖ TP402 TP401 ⊕
Erase current

C SWITCH P.C.B

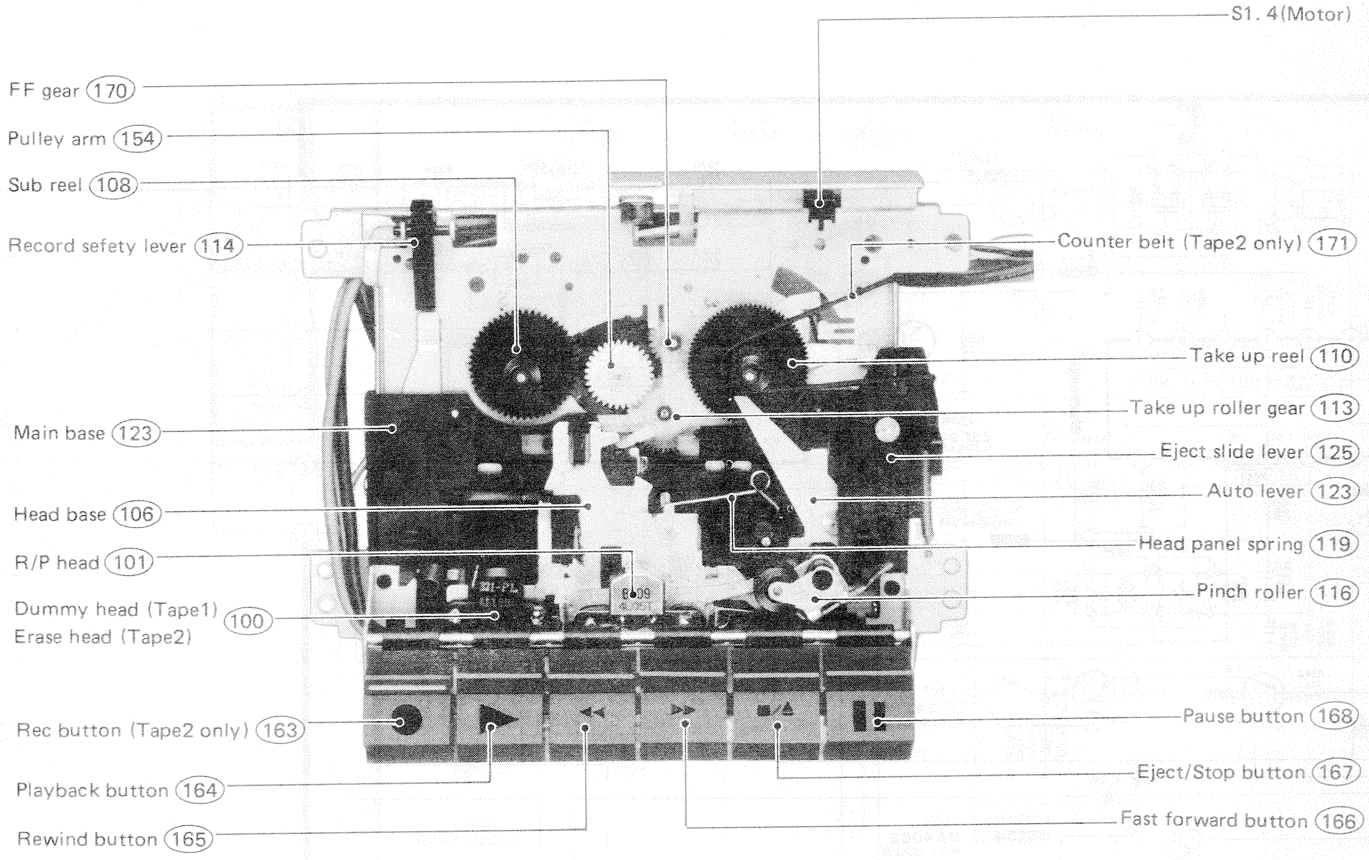

(FM stereo ind.)
D219
J202
D211
S201
S202
S203
S204
S205
S206
S207
S208
S209
S210
S211
S212
FM/AM RANDOM 6CH PRESET TUNING
(CH1)
(CH2)
(CH3)
(CH4)
(CH5)
(CH6)
TUNING
(DOWN)
(UP)
BAND SELECTOR
(FM)
(AM)
MEMORY
MODE

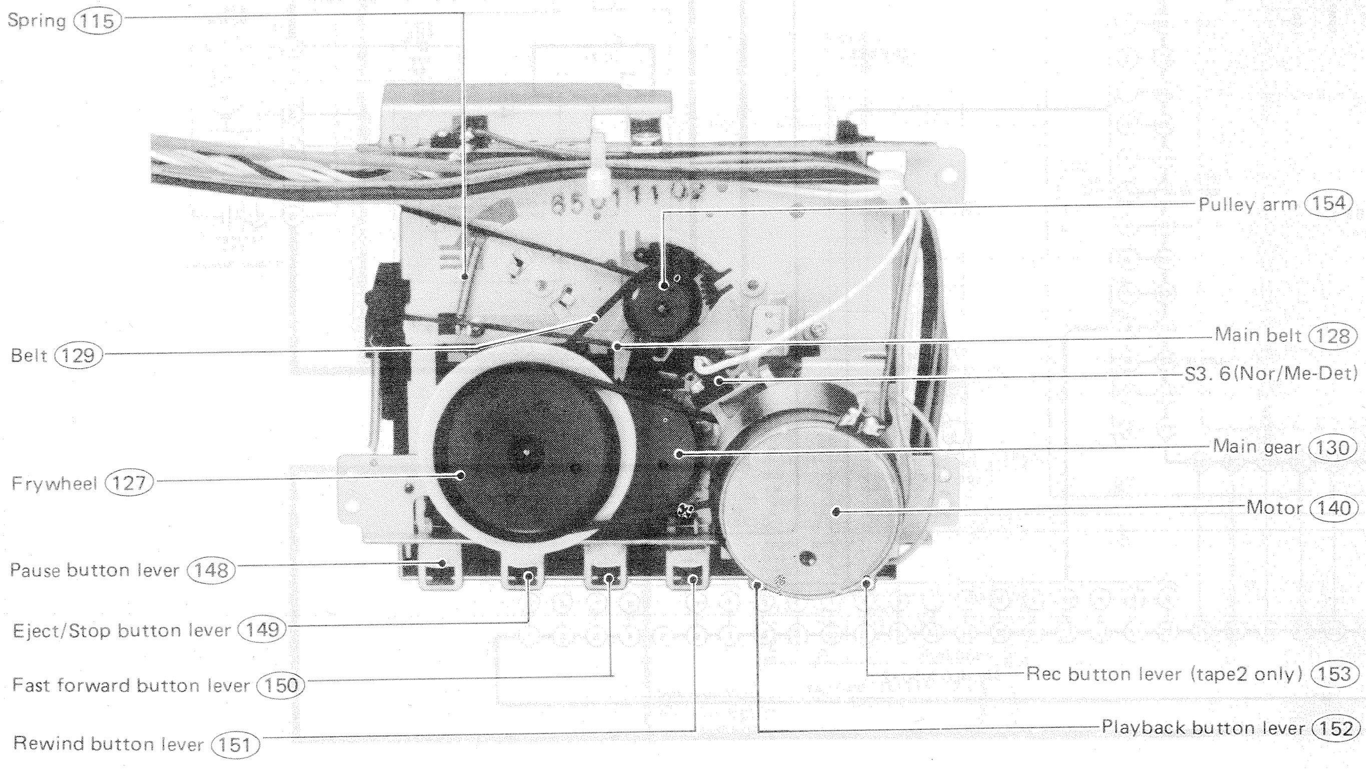
■ BLOCK DIAGRAM


FM
EXT ANT GND
AM
Q201 FM RF AMP
Q202 FM MIX
Q205 FM IF AMP
Q203 FM OSC
Q204 BUFFER
L203 AM ANT COIL
T201 AM IFT
L204 AM OSC COIL
IC201 AN7273B FM/AM IF AMP & DET
AM/FM IF AMP
FM IF AMP
FM DET
MUTING LEVEL DET
LEVEL METER
MUTING SHOCK NOISE REDUCTION
AF AMP
AM RF AMP
AM MIXER
AM OSC
AGC
AM DET
AM OSC
+B(AM)
GND
T203, 204 FM IFT
+B(FM)
IC202 AN7470 FM MPX
AF AMP
MPX
OUTPUT AMP
OUT
STEREO SWITCHING
PILOT DET.
DIV (19kHz)
DIV (38kHz)
STEREO/MONO CONTROL
PHASE DET.
VCO (76kHz)
VR201 MPX VCO adj
Q210, 211, 214 FM/AM SELECTOR
Q212, 213 LOOP FILTER
Q209 QUARTZ IND. SWITCH
Q208 IF LEVEL DET. SWITCH
CRYSTAL OSC (4.5MHz)
GE EO EO GND AM FM VDD COM1 COM2 LCD1
LCD5
X1
X2
A3
A2
5.7V
FM-5V AM-0V
FM/AM SELECTOR
STEREO/MONO SELECTOR
K3
K2
K1
K0
B3
B2
B1 B0 C3 C2 C1 MUT VDD LCD23 LCD20
LCD10
LCD15
IC203 μPD1708G561 PLL CONTROLLER
Q215 STEREO IND SWITCH
Q206 MUTING SWITCH
D219 STEREO EYE
UP
DOWN
AM
FM
MEMORY
MODE
CH5
CH6
CH1
CH2
CH3
CH4
KEY MATRIX
LIQUID CRYSTAL DISPLY (LCD)
memory
stereo
AM
FM
IC301 AN6558F P/B AMP
(TAPE 1)
Lch
P/B HEAD
Rch
(TAPE 2)
Playback signal
R/P HEAD
P/B
REC
S301-1
S301-2
Rec. signal
VR401 Record bias adj. (Lch)
VR402 Record bias adj. (Rch)
ERASE HEAD
Q401~403 BIAS OSC
REC
P/B
S301-3
+12V
ON
OFF
S505 (DUBBING)
VR301
Playback gain adj. (TAPE 1 Lch)
Q301 TAPE SELECTOR
Q303 MUTING
VR302
Q311 TAPE SELECTOR
Playback gain adj. (TAPE 1 Rch)
Q313 MUTING
VR303
Playback gain adj. (TAPE 2 Lch)
Q302 TAPE SELECTOR
Q304 MUTING
VR304
Q312 TAPE SELECTOR
Playback gain adj. (TAPE 2 Rch)
Q314 MUTING
Q305 TAPE MIX AMP
Q306 TAPE MIX AMP
S301-4
S301-5
Q307 MUTING
Q308 MUTING
Q309 MUTING
S301-6 (MUTING)
Q316 TAPE SELECTOR
Q315 TAPE SELECTOR
Record current adj. (Lch)
Record current adj. (Rch)
VR305
VR306
IC302 AN7010K R/P AMP
P/B AMP
POWER SUPPLY
REC AMP
Play
Rec
MIX AMP
SUB
MIC
Q531, 532 MIC AMP
MIC signal
TUNER
PHONO
TAPE
AUX
CARTRIDGE
Q501 PH AMP
Q502 PH AMP
AUX
Lch
Rch
Q451 METER AMP
D451~455 LEVEL METER
IC501 AN6552F G. EQ AMP
VR503-1
(100Hz)
Q54
VR503-2
(100Hz)
Q317, 318 D301~304 ALC
IC61
SVI
DOL
Power Supply
Rec
19kHz L.P.F

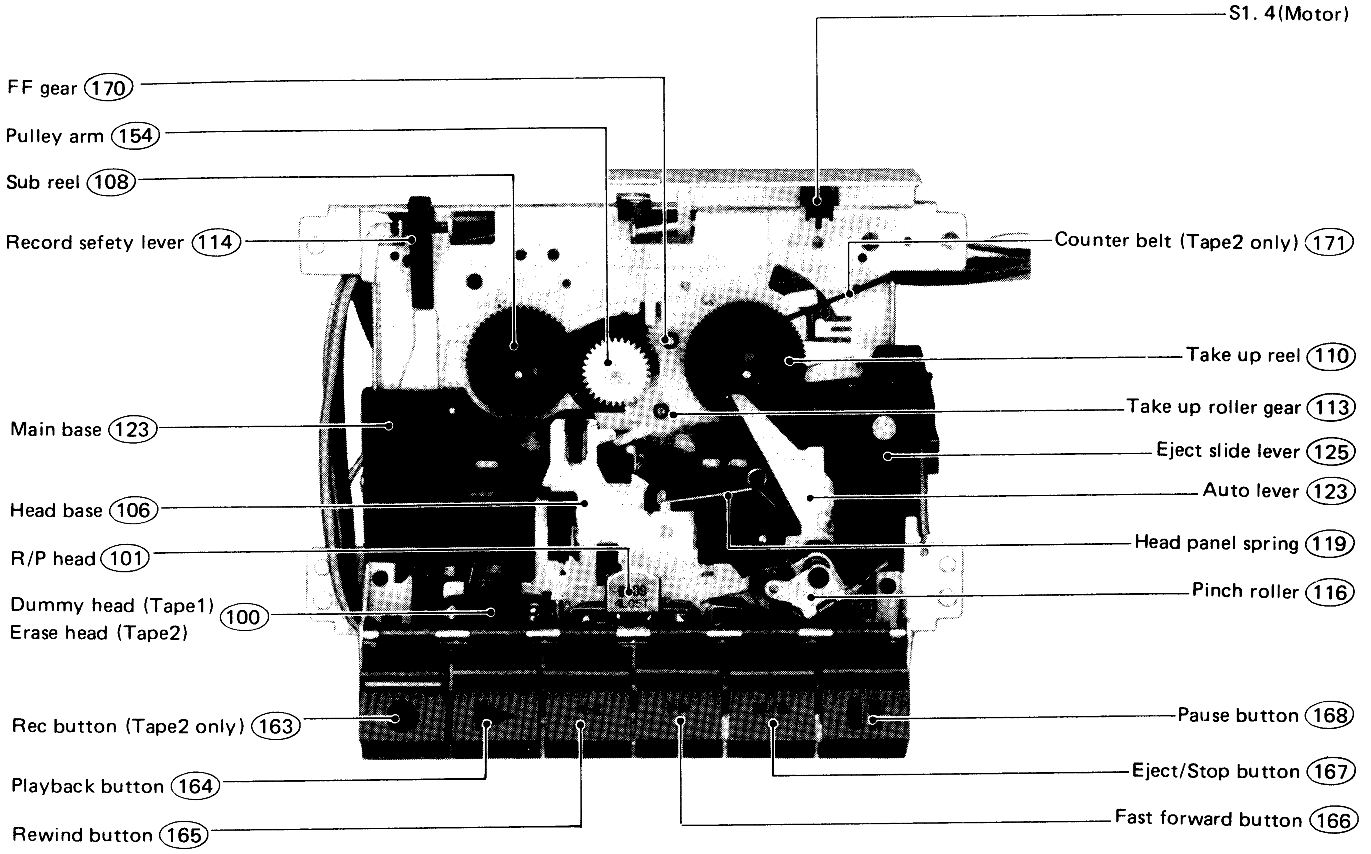

IC202
AN7470
FM MPX
AF AMP
MPX
OUTPUT AMP
OUTPUT AMP
STEREO SWITCHING
PILOT DET.
DIV (19kHz)
DIV (38kHz)
STEREO/ MONO CONTROL
PHASE DET.
VCO (76kHz)
OUT
OUT
VR201
MPX VCO adj
MIC
Q531, 532
MIC AMP
MIC signal
TUNER
PHONO
TAPE
AUX
CARTRIDGE
Q501
PH AMP
Q502
PH AMP
TUNER
PHONO
TAPE
AUX
Lch
AUX
Rch
Q451
METER AMP
IC451
AN6884
LED DRIVER
VREF
D451 ~ 455
LEVEL METER
+B
IC501
AN6552F
G. EQ AMP
VR503-1 VR504-1 VR505-1 VR506-1 VR507-1
(100Hz) (330Hz) (1kHz) (3.3kHz) (10kHz)
Q541, 543, 545, 547, 549
G. EQ AMP
BALANCE
VR501
VOLUME
VR502-1
VOLUME
VR502-2
IC601
SVI K4131-2M
POWER AMP
VOLTAGE AMP
POWER AMP
DIFFEREN-TIAL
BIAS CONTROL
POWER AMP
CURRENT STABI.
CURRENT STABI.
POWER AMP
DIFFEREN-TIAL
BIAS CONTROL
VOLTAGE AMP
POWER AMP
MUTE
+B
-B
-B
-B
HEADPHONES
Q601, 602
D602 ~ 606
MUTING
Lch
SPEAKERS
Rch
VR503-2 VR504-2 VR505-2 VR506-2 VR507-2
(100Hz) (330Hz) (1kHz) (3.3kHz) (10kHz)
Q542, 544, 546, 548, 550
G. EQ AMP
Q317, 318
D301 ~ 304
ALC
+B
-B
-12V
Q701
STABILIZER
POWER TRANS
T701
S701
(POWER)
AC220
50 / 60Hz
PL201
IC701
AN7812
STABILIZER
+12V
+12V
D701 ~ 704
RECTIFIER
D705 ~ 708
RECTIFIER
F
MP
VR301
Playback gain adj. (TAPE 1 Lch)
Q301
TAPE SELECTOR
Q303
MUTING
Q305
TAPE MIX AMP
S301-4
REC
P/B
Q307
MUTING
VR302
Q311
TAPE SELECTOR
Playback gain adj.
(TAPE 1 Rch)
Q313
MUTING
Q309
MUTING
S301-6
(MUTING)
VR303
Playback gain adj. (TAPE 2 Lch)
Q302
TAPE SELECTOR
Q304
MUTING
Q306
TAPE MIX AMP
S301-5
REC
P/B
Q308
MUTING
VR304
Q312
TAPE SELECTOR
Playback gain adj.
(TAPE 2 Rch)
Q314
MUTING
Q316
TAPE SELECTOR
Q315
TAPE SELECTOR
Record current adj.
(Lch)
Record current adj.
(Rch)
VR305
VR306
IC302
AN7010K
R/P AMP
P/B AMP
POWER SUPPLY
REC AMP
REC AMP
P/B AMP
Play
Rec
Play
Rec
MIX AMP
MIX AMP
SUB
IC61
SVITA7629P
DOLBY
Power Supply
Rec
19kHz L.P.F.
IC61
SVITA7629P
DOLBY
Power Supply
Rec
19kHz L.P.F.
REC
1-1
REC
1-2
gnal
ias adj.
03
C
REC
P/B
S301-3
+12V
ON
OFF
S505
(DUBBING)
+12V
IN
OUT
S506
(DOLBY)
+12V
S71
(Phono speed)
45
33
VR71
45rpm adj.
VR72
33rpm adj.
IC71
AN6610
PHONO MOTOR CONTROLLER
REFERENCE VOLTAGE GENERATION CIRCUIT
STARTING CIRCUIT
DIFFERENTIAL AMP
STARTING TORQUE CONPENSATING CIRCUIT
CURRENT DIVISION CIRCUIT
CONSTANT CURRENT CIRCUIT
GND
S72
PHONO MOTOR SW
+12
M
PHONO MOTOR
S1
CASSETTE MOTOR SW
S4
CASSETTE MOTOR SW
M
CASSETTE MOTOR
M
CASSETTE MOTOR
(TAPE 1)
(TAPE2)

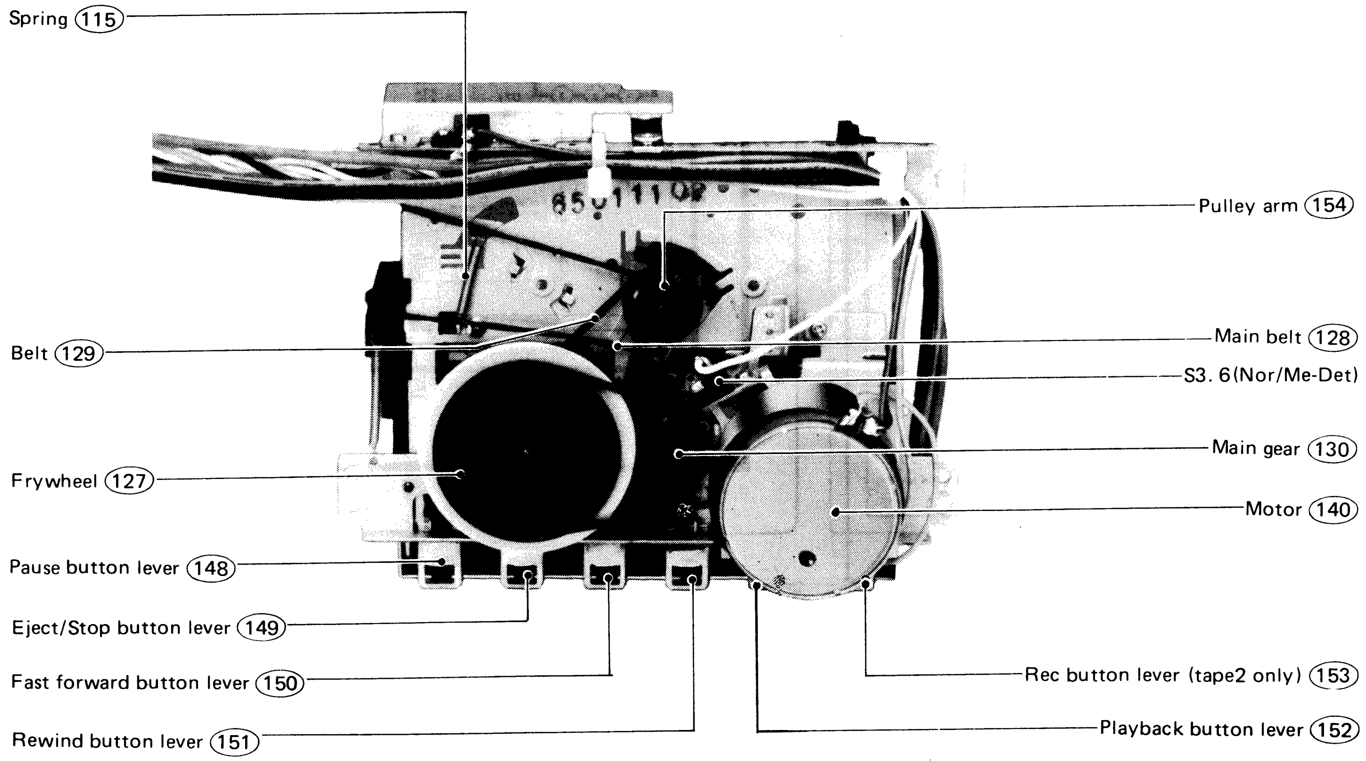
■ LOCATION OF CASSETTE DECK


S1. 4(Motor)
FF gear (170)
Pulley arm (154)
Sub reel (108)
Record sefety lever (114)
Counter belt (Tape2 only) (171)
Take up reel (110)
Take up roller gear (113)
Main base (123)
Eject slide lever (125)
Auto lever (123)
Head base (106)
Head panel spring (119)
R/P head (101)
Pinch roller (116)
Dummy head (Tape1)
Erase head (Tape2) (100)
Rec button (Tape2 only) (163)
Pause button (168)
Eject/Stop button (167)
Playback button (164)
Fast forward button (166)
Rewind button (165)

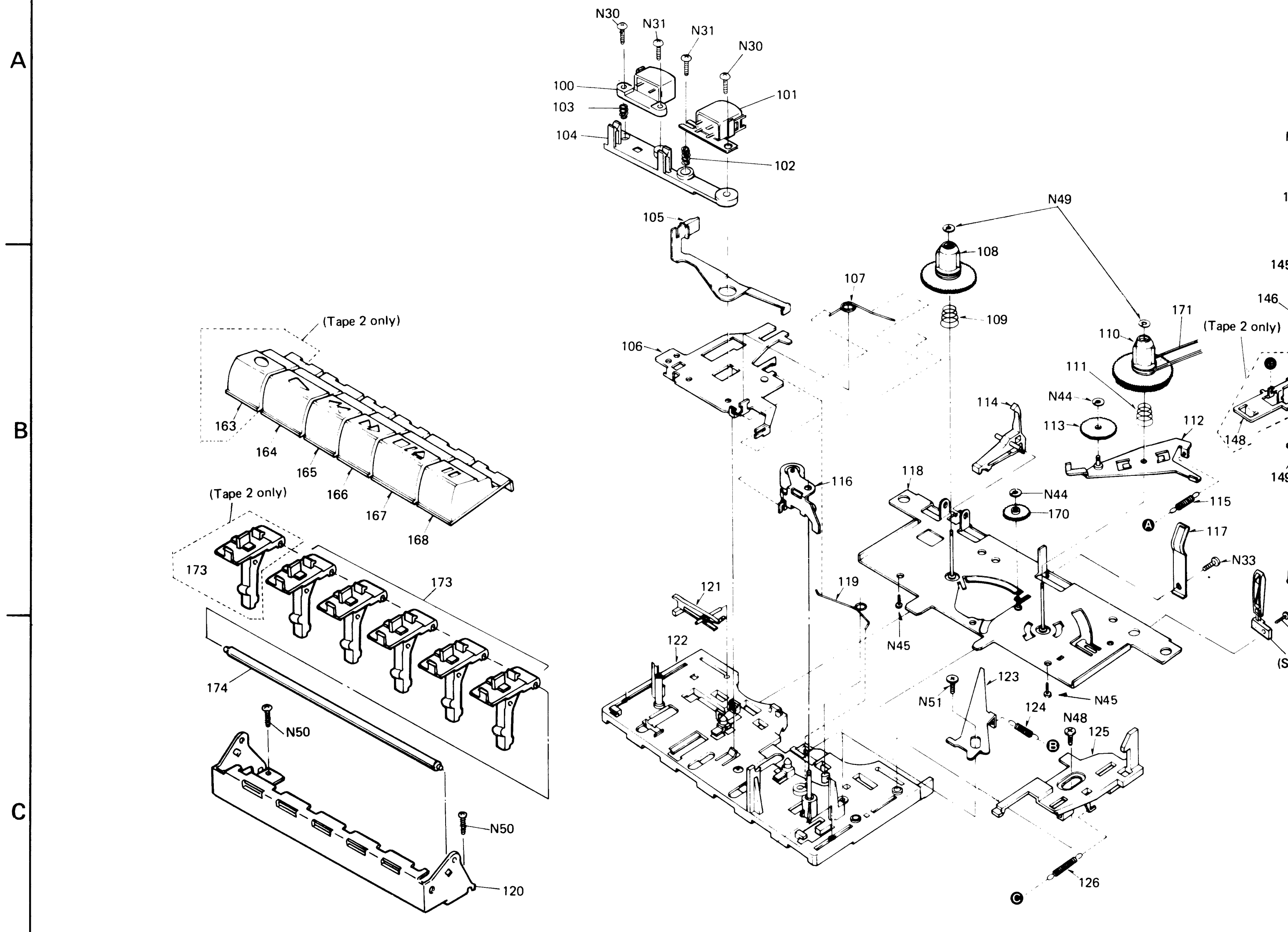

Spring (115)
85011102
Pulley arm (154)
Belt (129)
Main belt (128)
S3. 6(Nor/Me-Det)
Main gear (130)
Frywheel (127)
Motor (140)
Pause button lever (148)
Eject/Stop button lever (149)
Rec button lever (tape2 only) (153)
Fast forward button lever (150)
Playback button lever (152)
Rewind button lever (151)

■ LOCATION OF CASSETTE DECK


S1. 4(Motor)
FF gear ⒄⓪
Pulley arm (154)
Sub reel (108)
Record sefety lever (114)
Counter belt (Tape2 only) (171)
Take up reel (110)
Take up roller gear (113)
Main base (123)
Eject slide lever (125)
Auto lever (123)
Head base (106)
Head panel spring (119)
R/P head (101)
Pinch roller (116)
Dummy head (Tape1)
Erase head (Tape2) (100)
Rec button (Tape2 only) (163)
Pause button (168)
Playback button (164)
Eject/Stop button (167)
Rewind button (165)
Fast forward button (166)


Spring (115)
Pulley arm (154)
Belt (129)
Main belt (128)
S3. 6(Nor/Me-Det)
Main gear (130)
Frywheel (127)
Motor (140)
Pause button lever (148)
Eject/Stop button lever (149)
Fast forward button lever (150)
Rec button lever (tape2 only) (153)
Rewind button lever (151)
Playback button lever (152)

■ PARTS LOCATION OF CASSETTE TAPE DECK (tape 1, tape 2)


A
B
C
N30
N31
N31
N30
100
103
104
101
102
N49
105
107
108
109
106
(Tape 2 only)
171
110
(Tape 2 only)
111
N44
113
114
112
148
163
164
165
166
167
168
(Tape 2 only)
116
118
N44
170
115
117
N33
173
173
121
119
122
N45
123
N51
124
N45
N48
125
174
N50
N50
120
126

A	104 100 103 105 102 101 144
B	173 163 164 165 166 167 168 173 106 121 107 116 119 118 108 114 109 170 113 111 110 171 112 117 115 148 146 149
C	174 120 122 123 124 126 125

Ref.No.	Part No.	Description
CASSETTE TAPE DECK PARTS		
100	SJHE700XE	Dummy Head (TAPE1 only) (1)
	SJH94	Erase Head (TAPE2 only) (1)
101	SJH92	R/P Head (2)
102	RFS447Z	Spring (2)
103	SMQT1469	Spring (2)
104	SMQT1468	Head Base (2)
105	RFY394Z	Sensing Plate Ass'y (2)
106	SMQT1467	Head Base Ass'y (2)
107	RFS448Z	Pinch Roller Spring (2)
108	RFJ43Z	Sub Reel Ass'y (2)
109	SMQT1470	Spring (2)
110	RFJ44Z	Take up Reel Ass'y (2)
111	SMQT1471	Reel Spring (2)
112	RFG71Z	Take up Gear Plate Ass'y (2)
113	RFG61Z	Take up Roller Gear (2)
114	SMQ4778	Record Safety Lever (TAPE2 only) (1)
115	RFS450Z	Plate Spring (2)

Ref.No.	Part No.	Description
CASSETTE TAPE DECK PARTS		
116	RFR26Z	Pinch Roller Ass'y (2)
117	RFS467Z	Pack Spring (2)
118	RFU40Z	Reel Base Ass'y (2)
119	RFS452Z	Head Panel Spring (2)
120	SMQT1477	Frame (2)
121	RFX100Z	Play Sensing Piece (2)
122	RFU41Z	Main Base Ass'y (2)
123	RFY414Z	Auto Lever (2)
124	RFS453Z	Auto Lever Spring (2)
125	SMQT1475	Eject Slide Lever (2)
126	RFS454Z	Eject Slide Lever Spring (2)
127	RFF32Z	Frywheel Ass'y (2)
128	RFB46Z	Main Belt (2)
129	RFB47Z	Belt (2)
130	RFG72Z	Main Gear (2)
131	RFS455Z	Main Gear Spring (2)
132	RFS465Z	Record Arm Spring (2)
133	SMQT1481	Record Function Arm (2)
134	RFS456Z	Record Spring (1)
135	RFY417Z	Record Function Arm (TAPE2 only) (1)
136	RFS457Z	Record Sensor Spring(TAPE2 only) (1)

Ref.No.	Part No.	Description
CASSETTE TAPE DECK PARTS		
137	RFY418Z	Record Sensor (TAPE2 only) (1)
138	RFS458Z	Record Arm Spring (2)
139	RFY419Z	Trigger Ass'y (2)
140	MMI5A2LB	Motor (2)
141	RFI27Z	Motor Rubber (3)
142	SMQT1474	Motor Pulley (2)
143	SMQT1473	Motor Bracket (2)
144	RFU43Z	Supply Reel Ass'y (2)
145	SMQT1463	Pause Stopper (2)
146	RFS459Z	Pause Lever Spring (2)
147	RFY420Z	Pause Lever (2)
148	RFY421Z	Pause Button Lever Ass'y (2)
149	RFY422Z	Eject/Stop Button Lever (2)
150	RFY423Z	Fast Forward Button Lever (2)
151	RFY424Z	Rewind Button Lever (2)
152	RFY425Z	Playback Button Lever (2)
153	RFY426Z	Rec Button Lever (TAPE2 only) (1)

Ref.No.	
CASSETTE TA	
154	RFK
155	RFS
156	SMQ
157	RFS
158	RFX
159	RFY
160	RFY
161	RFS
162	RFY
163	SBC
164	SBC
165	SBC
166	SBC
167	SBC
168	SBC
169	SMQ
170	RFG
171	QDB
172	SMQ
173	SMQ

. 4(Motor)

nly) (171)

reel (110)

gear (113)

lever (125)

lever (123)

ring (119)

oller (116)

tton (168)

tton (167)

tton (166)

arm (154)

belt (128)

or/Me-Det)

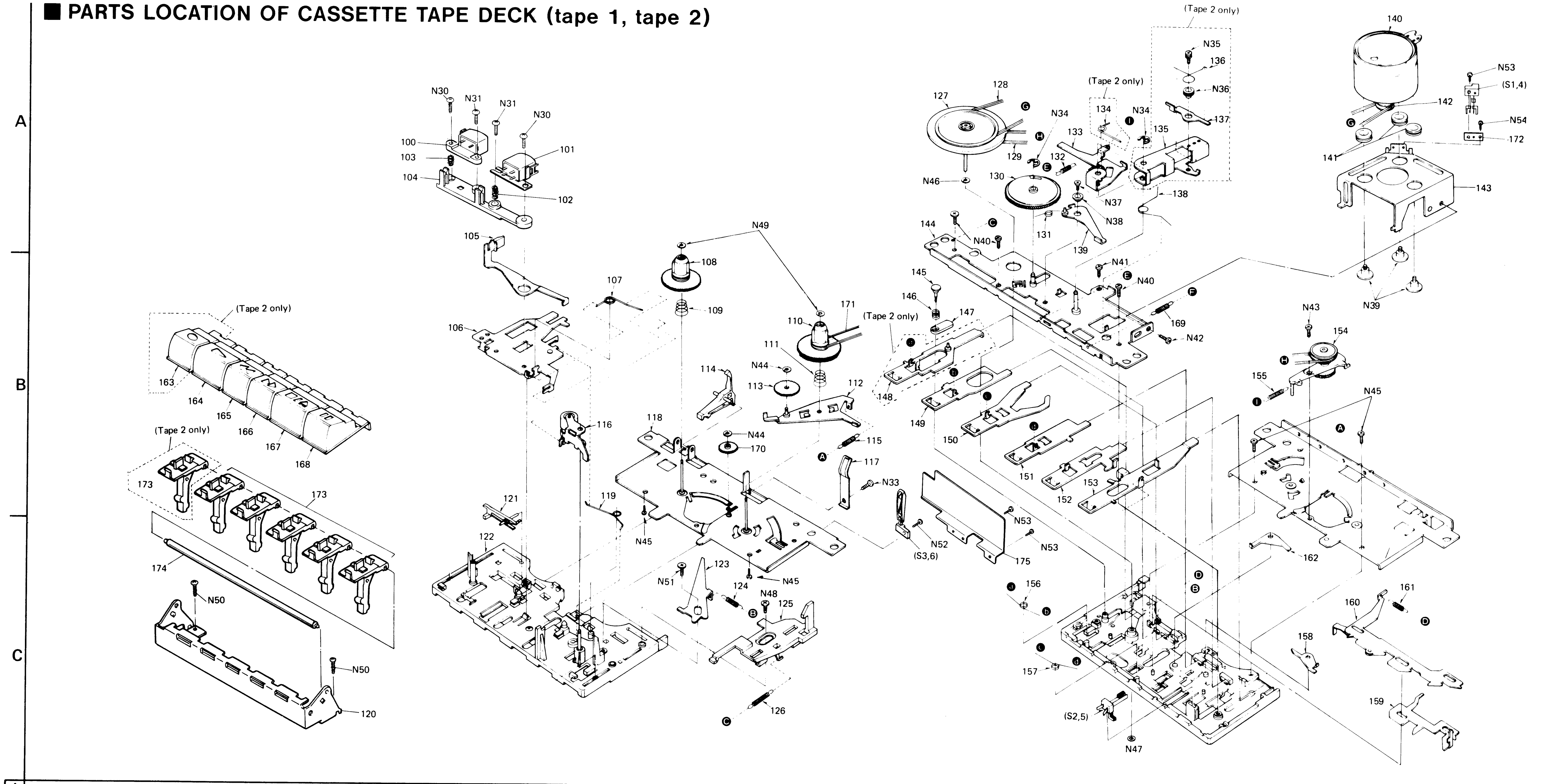
gear (130)

Motor (140)

nly) (153)

lever (152)

■ PARTS LOCATION OF CASSETTE TAPE DECK (tape 1, tape 2)



A	104 100 103 105 102 101 144 127 130 128 129 131 132 133 139 134 135 138 136 137 141 140 142 143 172
B	173 163 164 165 166 167 168 173 106 121 107 116 119 118 108 114 109 170 113 111 110 171 112 117 115 148 146 149 145 150 147 151 152 153 169 155 154
C	174 120 122 123 124 126 125 157 156 175 158 162 160 159 161

Ref.No.	Part No.	Description	
CASSETTE TAPE DECK PARTS			
100	SJHE700XE	Dummy Head (TAPE1 only)	(1)
	SJH94	Erase Head (TAPE2 only)	(1)
101	SJH92	R/P Head	(2)
102	RFS447Z	Spring	(2)
103	SMQT1469	Spring	(2)
104	SMQT1468	Head Base	(2)
105	RFY394Z	Sensing Plate Ass'y	(2)
106	SMQT1467	Head Base Ass'y	(2)
107	RFS448Z	Pinch Roller Spring	(2)
108	RFJ43Z	Sub Reel Ass'y	(2)
109	SMQT1470	Spring	(2)
110	RFJ44Z	Take up Reel Ass'y	(2)
111	SMQT1471	Reel Spring	(2)
112	RFG71Z	Take up Gear Plate Ass'y	(2)
113	RFG61Z	Take up Roller Gear	(2)
114	SMQ4778	Record Safety Lever (TAPE2 only)	(1)
115	RFS450Z	Plate Spring	(2)
116	RFR26Z	Pinch Roller Ass'y	(2)
117	RFS467Z	Pack Spring	(2)
118	RFU40Z	Reel Base Ass'y	(2)
119	RFS452Z	Head Panel Spring	(2)
120	SMQT1477	Frame	(2)
121	RFX100Z	Play Sensing Piece	(2)
122	RFU41Z	Main Base Ass'y	(2)
123	RFY414Z	Auto Lever	(2)
124	RFS453Z	Auto Lever Spring	(2)
125	SMQT1475	Eject Slide Lever	(2)
126	RFS454Z	Eject Slide Lever Spring	(2)
127	RFF32Z	Frywheel Ass'y	(2)
128	RFB46Z	Main Belt	(2)
129	RFB47Z	Belt	(2)
130	RFG72Z	Main Gear	(2)
131	RFS455Z	Main Gear Spring	(2)
132	RFS465Z	Record Arm Spring	(2)
133	SMQT1481	Record Function Arm	(2)
134	RFS456Z	Record Spring	(1)
135	RFY417Z	Record Function Arm (TAPE2 only)	(1)
136	RFS457Z	Record Sensor Spring(TAPE2 only)	(1)
137	RFY418Z	Record Sensor (TAPE2 only)	(1)
138	RFS458Z	Record Arm Spring	(2)
139	RFY419Z	Trigger Ass'y	(2)
140	MMI5A2LB	Motor	(2)
141	RFI27Z	Motor Rubber	(3)
142	SMQT1474	Motor Pulley	(2)
143	SMQT1473	Motor Bracket	(2)
144	RFU43Z	Supply Reel Ass'y	(2)
145	SMQT1463	Pause Stopper	(2)
146	RFS459Z	Pause Lever Spring	(2)
147	RFY420Z	Pause Lever	(2)
148	RFY421Z	Pause Button Lever Ass'y	(2)
149	RFY422Z	Eject/Stop Button Lever	(2)
150	RFY423Z	Fast Forward Button Lever	(2)
151	RFY424Z	Rewind Button Lever	(2)
152	RFY425Z	Playback Button Lever	(2)
153	RFY426Z	Rec Button Lever (TAPE2 only)	(1)
154	RFK11Z	Pulley Arm Ass'y	(2)
155	RFS461Z	Pulley Arm Spring	(2)
156	SMQT1464	Button Lever Spring	(2)
157	RFS462Z	Button Lever Spring	(2)
158	RFX101Z	P.R.Stopper	(2)
159	RFY427Z	Switch Plate	(2)
160	RFY429Z	Push Button Actuator Ass'y	(2)
161	RFS466Z	Actuator Spring	(2)
162	RFY428Z	RWD Lever	(2)
163	SBC746	Button,Recording (TAPE2 only)	(1)
164	SBC747	Button,Playback	(2)
165	SBC748	Button,Rewind	(2)
166	SBC749	Button,Fast forward	(2)
167	SBC750	Button,Eject/Stop	(2)
168	SBC751	Button,Pause	(2)
169	SMQT1465	Button Lever Spring	(2)
170	RFG62Z	FF Gear	(2)
171	QDB0143-2	Counter Belt (TAPE2 only)	(1)
172	SMQT1472	Switch Bracket	(1)
173	SMQT1478	Button Lever	(1)
174	SMQT1479	Button Lever Shaft	(2)
175	SMQT1483	Switch Cover	(2)
SCREWS			
N30	XSN2+7	Tapping,⊕2×7	(2)
N31	XSN2+8	Azimuth Screw, ⊕2×7	(2)
N32	XSN2+8	Tapping,⊕2×8	(2)
N33	SMQT1482	Collar Screw (For Camera)	(2)
N34	XUC2FT	E Ring ϕ2	(4)
N35	XSN2+5	Tams Screw,⊕2×5 (TAPE2 only)	(2)
N36	RFX103Z	Record Sencer Collar(TAPE2 only)	(1)
N37	SMQ4926	Tapping,⊕2×25 (For Camera)	(2)
N38	SMQT1480	Collar	(2)
N39	SMQ4918	Motor Collar Screw	(3)
N40	XSN2+4	Tapping Bind ⊕2×4	(6)
N41	XSN2+5	Tapping,⊕2×5	(4)
N42	XTN2+4FN	Tapping,⊕2×4	(6)
N43	RFE172Z	Arm Collar Screw	(2)
N44	RFN143Z	Polyethylene Washer	(4)
N45	XTN2+35FN	Tapping,⊕2×35	(4)
N46	SMQ4932	Polyethylene Washer	(2)
N47	RFN123Z	Polyethylene Washer	(2)
N48	SMQT1476	Slide Lever Screw	(2)
N49	RFN142Z	Polyethylene Washer	(4)
N50	XQN2+7	Tapping,⊕2×7	(4)
N51	RFE146Z	Auto Lever Pin	(2)
N52	XTB2+5	Tapping,⊕2×5	(2)
N53	XSN2+3	⊕2×3	(6)
N54	XSN2+5	⊕2×5	(2)
N55	XSN2+6	⊕2×6	(2)

■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

- The part No. of transistors IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with ✪ mark, the production part No. are different from the replacement part No. Therfore, when placing an order for replacement parts, please use the part No. in the replacement parts list.

NOTES

1. **Tape1** { **S1** :Cassette motor switch in **"off"** position.
   S2 :Muting switch in **"off"** position.
   S3 :Tape selector switch in **"normal"** position.
2. **Tape2** { **S4** :Cassette motor switch in **"off"** position.
   S5 :Muting switch in **"off"** position.
   S6 :Tape selector switch in **"normal"** position.
3. **S71** :Phono speed selector switch in "**33rpm**" position. (45 ←→ 33)
4. **S72** :Phono motor switch in **"off"** position.
5. **S201～206** :Preset tuning switch.
6. **S207** :Memory switch.
7. **S208,209** :Tuning (up, down) switch S208 down, S209 up
8. **S210,211** :Band selector switch S210 FM, S211 AM allocation (9kHz/10kHz step)
9. **S212** :Mode switch.
10. **S301** :Rec / Play selector switch in " **PLAY** " position.
11. **S401** :Beat proof switch in "**B**" position.
12. **S501～504** :Input selector switch in "**tuner**" position.
    :S501 CD/AUX, S502 Tape, S503 Phono, S504 Tuner
13. **S505** :Dubbing switch in "**off**" position. (off ←→ on)
14. **S506** :Dolby, NR switch "**out**" position. (out ←→ in)
15. **S701** :Power source switch in "**on**" position.
16. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

   *All voltage values shown in circuitry are DC voltage in FM signal (monaural signal) reception mode.

   * Figures in ( ) stand for DC voltage in RECORDING (Normal) signal reception mode

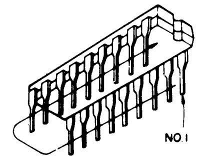
   * Figures in [ ] stand for DC voltage in RECORDING (Metal) signal reception mode.

   * Figures in [[ ]] stand for DC voltage in playing signal reception mode.

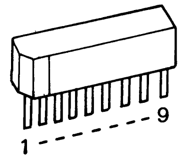
──── Positive voltage lines	⇨ FM signal	▭▭▭▷ FM OSC	▨▨▨▷ MIC signal
➡ AM signal	■■■▶ AM OSC	░░░▷ Tuner, Tape P/B, PH and AF signal lines	
░░ ░░ ▷ Rec signal			

■ TERMINAL GUIDE OF TRANSISTOR, DIODES AND IC'S

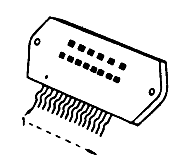
AN7010K	28pin
AN7470	16pin
SVITA7629P	16pin
AN7273B	18pin
AN6552F	8pin
AN6558F	8pin



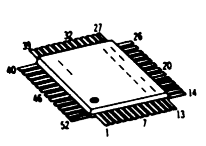
AN6884(9pin)



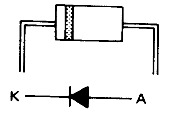
SVIK4131−2M



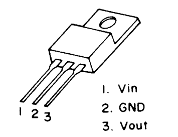
µPD1708G561


1
13
14
26
27
39
40
52

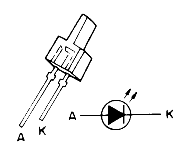
MA165
ISS254



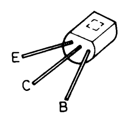
AN6610
AN7812


1 2 3
1. Vin
2. GND
3. Vout

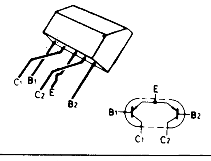
LN250RPH



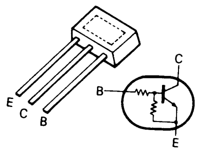
2SC1675, 2SC1674, 2SC829
2SC945, 2SD592. 2SA684



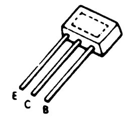
2SC1583


C
B₁
C₂
E₁
B₂
E
C₁
C₂

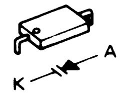
UN4211



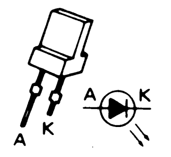
2SA1309,
2SC3311



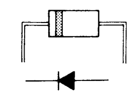
MA325



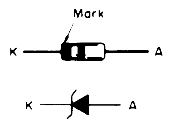
LN846RP



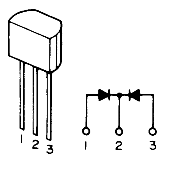
SVDISR35200
SVZSR1K2

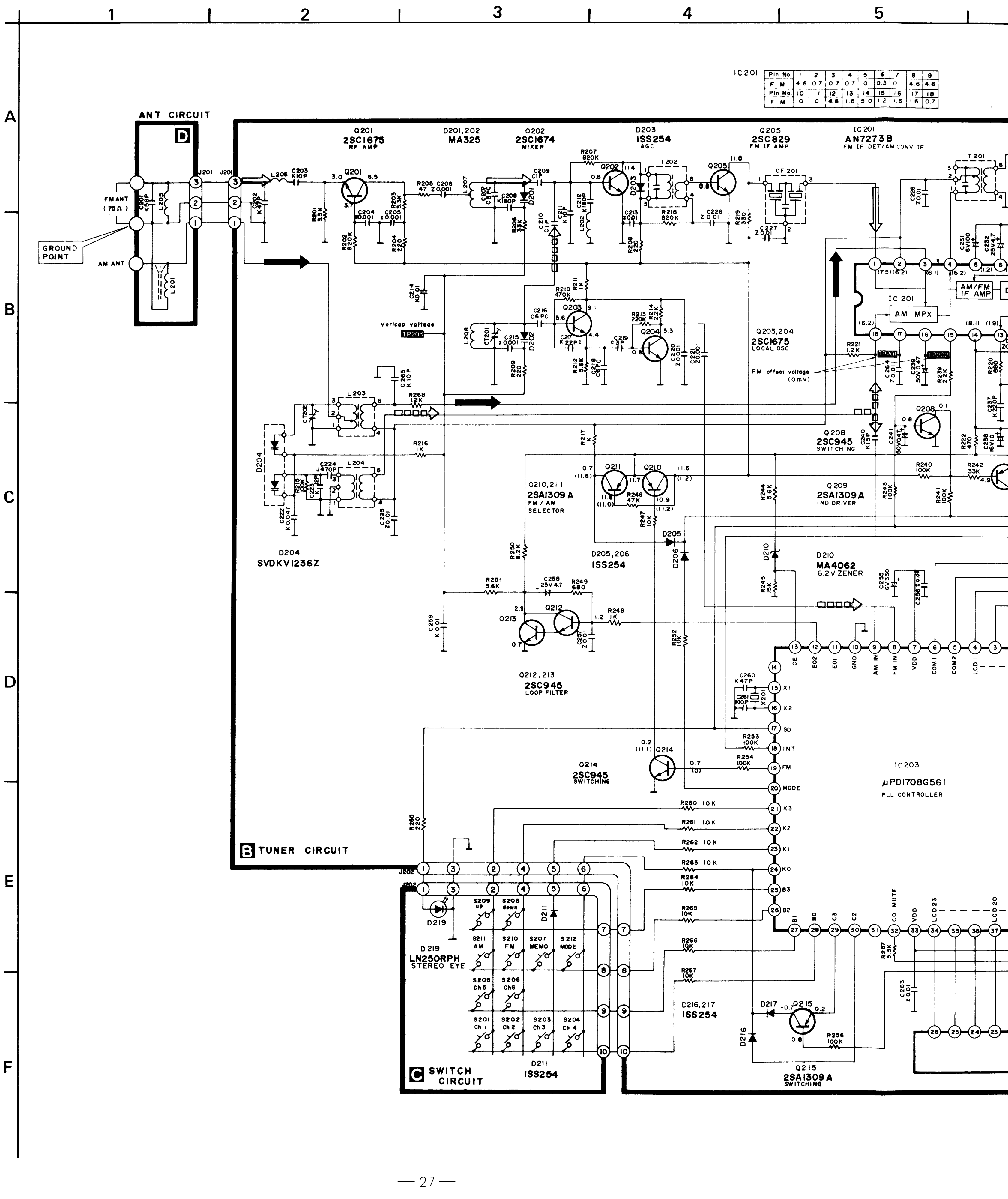


MA1120M



SVDMC921




1
2
3
4
5
A
B
C
D
E
F
IC201
ANT CIRCUIT
D
FM ANT (75Ω)
AM ANT
GROUND POINT
J201
L201
L205
B TUNER CIRCUIT
Q201 2SC1675 RF AMP
D201,202 MA325
Q202 2SC1674 MIXER
D203 ISS254 AGC
Q205 2SC829 FM IF AMP
IC201 AN7273B FM IF DET/AM CONV IF
CF201
T201
T202
IC 201
AM MPX
AM/FM IF AMP
Varicap voltage
TP206
TP201
TP202
Q203,204 2SC1675 LOCAL OSC
FM offset voltage (0mV)
L203
L204
L206
L208
D204 SVDKV1236Z
Q208 2SC945 SWITCHING
Q210,211 2SA1309A FM / AM SELECTOR
Q209 2SA1309A IND DRIVER
D205,206 ISS254
D210 MA4062 6.2V ZENER
Q212,213 2SC945 LOOP FILTER
Q214 2SC945 SWITCHING
IC203 µPD1708G561 PLL CONTROLLER
CE
EO2
EO1
GND
AM IN
FM IN
VDD
COM1
COM2
LCD1
X1
X2
SD
INT
FM
MODE
K3
K2
K1
K0
B3
B2
B1
B0
C3
C2
CO MUTE
J202
C SWITCH CIRCUIT
S209 up
S208 down
S211 AM
S210 FM
S207 MEMO
S212 MODE
S205 Ch5
S206 Ch6
S201 Ch1
S202 Ch2
S203 Ch3
S204 Ch4
D211 ISS254
D219 LN250RPH STEREO EYE
D216,217 ISS254
Q215 2SA1309A SWITCHING

No.
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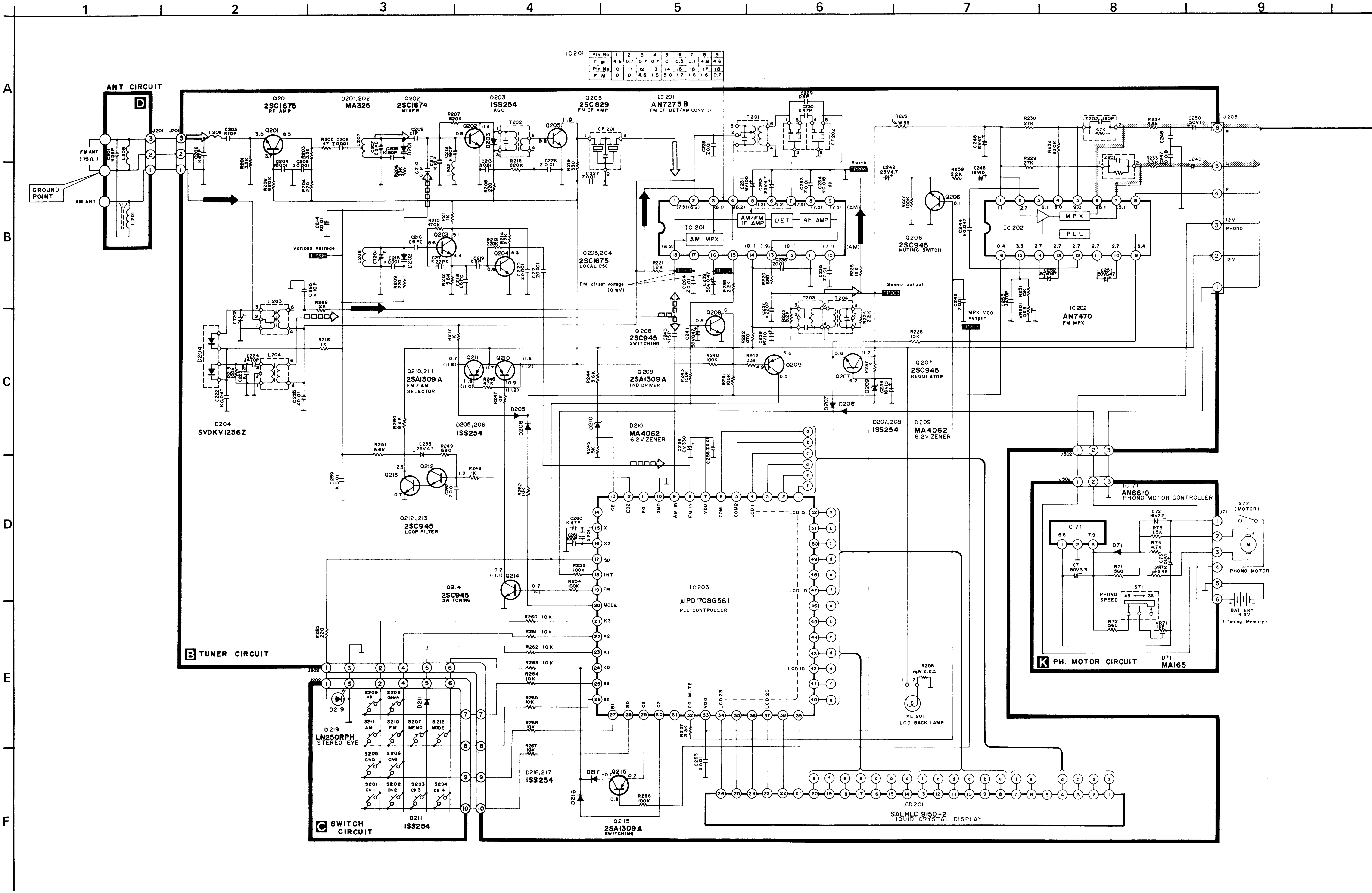
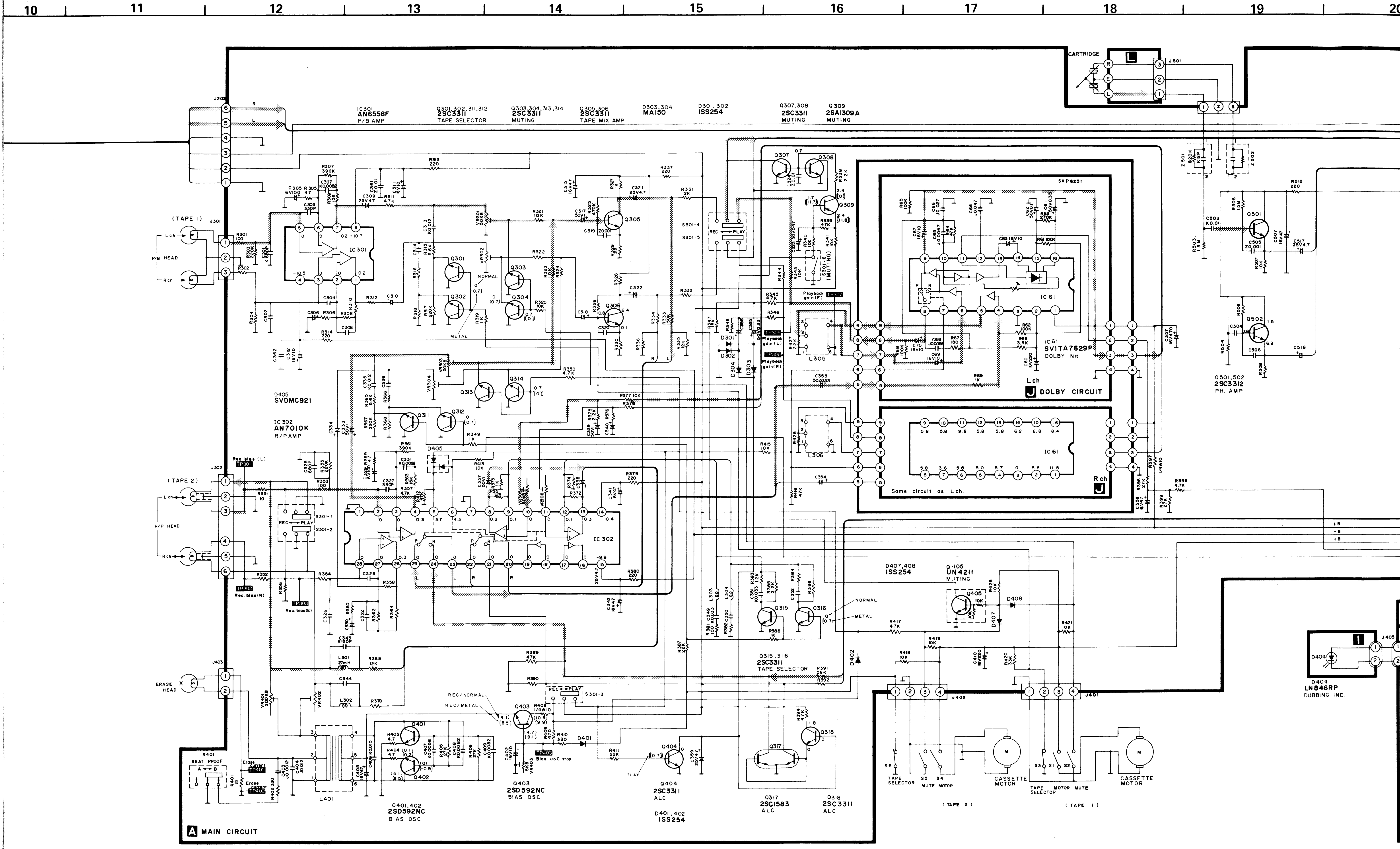
of the

IC201

Pin No.	1	2	3	4	5	6	7	8	9
F M	4.6	0.7	0.7	0.7	0	0.5	0.1	4.6	4.6
Pin No.	10	11	12	13	14	15	16	17	18
F M	0	0	4.6	1.6	5.0	1.2	1.6	1.6	0.7


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
ANT CIRCUIT
D
FM ANT (75Ω)
GROUND POINT
AM ANT
J201
J201
Q201 2SC1675 RF AMP
D201,202 MA325
Q202 2SC1674 MIXER
D203 1SS254 AGC
Q205 2SC829 FM IF AMP
IC201 AN7273B FM IF DET/AM CONV IF
T201
T202
CF201
CF202
Earth
TP204
TP205
TP201
TP202
TP203
AM/FM IF AMP
DET
AF AMP
IC201
AM MPX
(AM)
Varicap voltage
Q203
Q204
Q203,204 2SC1675 LOCAL OSC
FM offset voltage (0mV)
Q208 2SC945 SWITCHING
Q206 2SC945 MUTING SWITCH
Sweep output
T203
T204
MPX VCO output
IC202
MPX
PLL
IC202 AN7470 FM MPX
J203
R
E
12V
PHONO
12V
L203
L204
D204
D204 SVDKV1236Z
Q210,211 2SA1309A FM/AM SELECTOR
Q209 2SA1309A IND DRIVER
Q207 2SC945 REGULATOR
D205,206 1SS254
D210 MA4062 6.2V ZENER
D207,208 1SS254
D209 MA4062 6.2V ZENER
Q212,213 2SC945 LOOP FILTER
Q214 2SC945 SWITCHING
IC203 µPD1708G561 PLL CONTROLLER
CE
EO2
EO1
GND
AM IN
FM IN
VDD
COM1
COM2
LCD1
LCD5
LCD10
LCD15
X1
X2
SO
INT
FM
MODE
K3
K2
K1
K0
B3
B2
B1
B0
C3
C2
CO MUTE
VDD
LCD23
LCD20
B TUNER CIRCUIT
J202
J202
D219
D219 LN250RPH STEREO EYE
S209 up
S208 down
S211 AM
S210 FM
S207 MEMO
S212 MODE
S205 Ch5
S206 Ch6
S201 Ch1
S202 Ch2
S203 Ch3
S204 Ch4
D211
D211 1SS254
C SWITCH CIRCUIT
D216,217 1SS254
D216
D217
Q215
Q215 2SA1309A SWITCHING
LCD201
SALHLC 9150-2 LIQUID CRYSTAL DISPLAY
PL201 LCD BACK LAMP
R258 1/4W 2.2Ω
J502
J502
IC71 AN6610 PHONO MOTOR CONTROLLER
J71
S72 (MOTOR)
M
PHONO MOTOR
BATTERY 4.5V
(Tuning Memory)
IC71
D71
S71
PHONO SPEED
45 ⟷ 33
VR71 1KB
VR72 2KB
K PH. MOTOR CIRCUIT
D71 MA165


10
11
12
13
14
15
16
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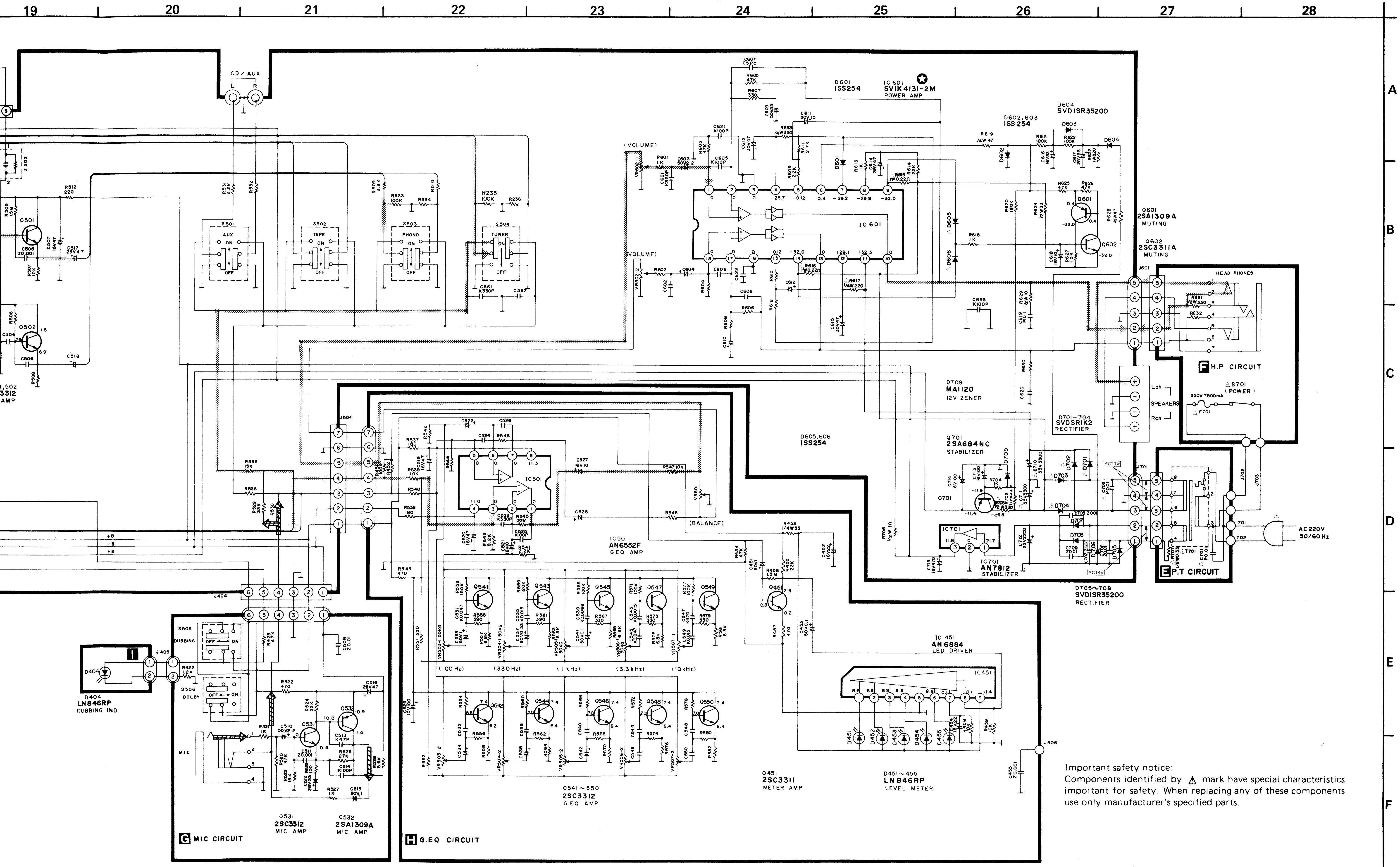
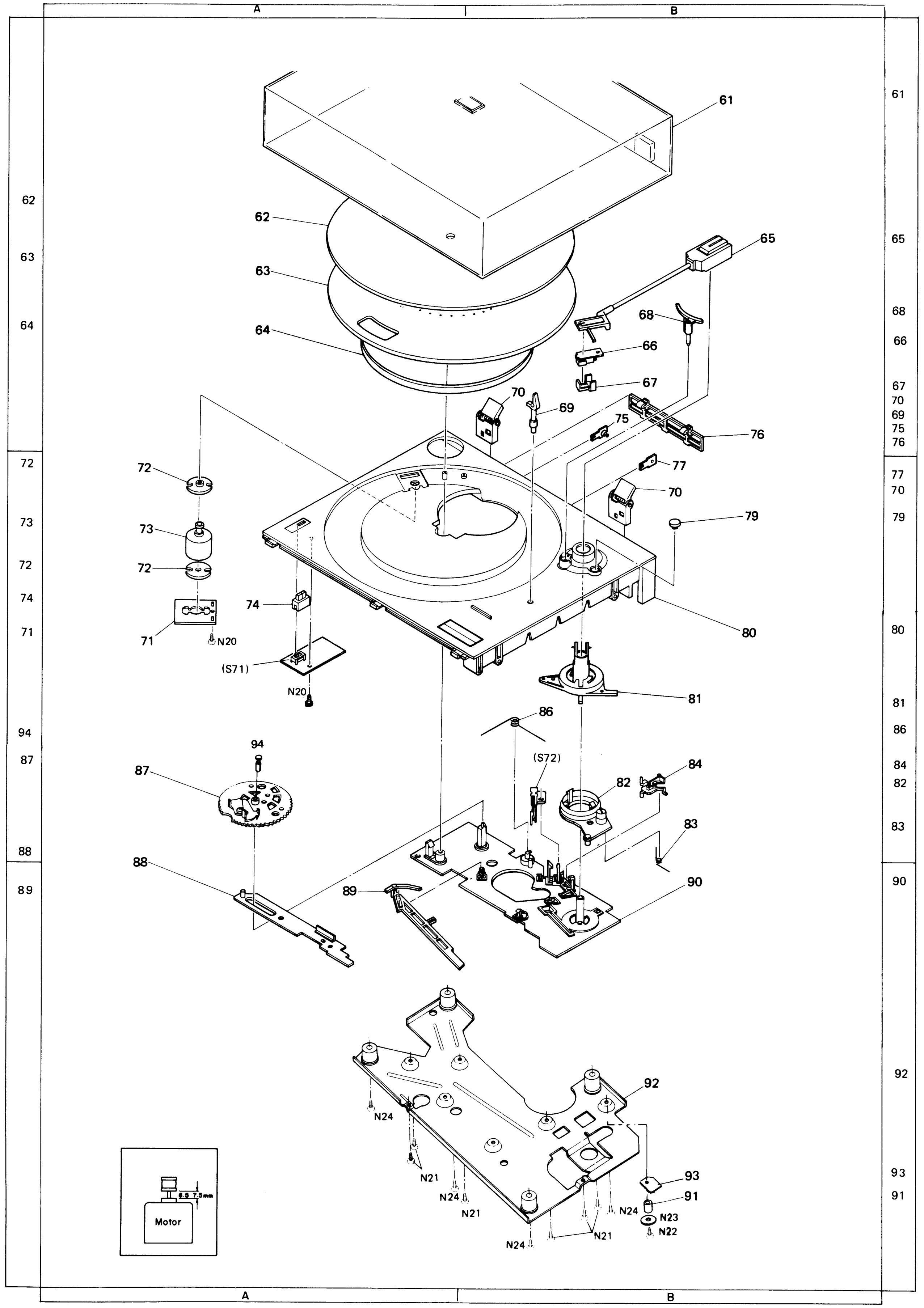
18
19
20
IC301 AN6558F P/B AMP
Q301,302,311,312 2SC3311 TAPE SELECTOR
Q303,304,313,314 2SC3311 MUTING
Q305,306 2SC3311 TAPE MIX AMP
D303,304 MA150
D301,302 1SS254
Q307,308 2SC3311 MUTING
Q309 2SA1309A MUTING
CARTRIDGE
J501
J203
J301
(TAPE 1)
P/B HEAD
Lch
Rch
J302
(TAPE 2)
R/P HEAD
J403
ERASE HEAD
D405 SVDMC921
IC302 AN7010K R/P AMP
Rec. bias (L) TP301
Rec. bias (R) TP302
Rec. bias (E) TP303
Playback gain (E) TP307
Playback gain (L) TP305
Playback gain (R) TP306
NORMAL
METAL
REC ↔ PLAY
S301-1
S301-2
S301-3
S301-4
S301-5
S301-6 (MUTING)
SXP6251
IC61 SVITA7629P DOLBY NR
Lch
J DOLBY CIRCUIT
IC61
Same circuit as Lch.
R ch J
Q501,502 2SC3312 PH. AMP
Z501
Z502
D407,408 1SS254
Q405 UN4211 MUTING
D404 LN846RP DUBBING IND.
I
J405
J402
J401
S6 TAPE SELECTOR
S5 S4 MUTE MOTOR
CASSETTE MOTOR
(TAPE 2)
S3 S1 S2
TAPE SELECTOR MOTOR MUTE
CASSETTE MOTOR
(TAPE 1)
S401 BEAT PROOF
Erase current TP401
Erase current TP402
L401
Q401,402 2SD592NC BIAS OSC
Q403 2SD592NC BIAS OSC
TP403 Bias OSC stop
REC/NORMAL
REC/METAL
Q404 2SC3311 ALC
D401,402 1SS254
Q315,316 2SC3311 TAPE SELECTOR
Q317 2SC1583 ALC
Q318 2SC3311 ALC
L301 27mH
L302
L303
L305
L306
+B
-B
+B
A MAIN CIRCUIT


19
20
21
22
23
24
25
26
27
28
A
B
C
D
E
F
CD / AUX
L
R
(VOLUME)
VR502-1
VR502-2
D601
1SS254
IC601 SVIK4131-2M
POWER AMP
IC 601
D602,603
1SS254
D604
SVD1SR35200
D603
D604
D605
D606
Q601
Q602
Q601
2SA1309A
MUTING
Q602
2SC3311A
MUTING
J601
HEAD PHONES
F H.P CIRCUIT
Lch
SPEAKERS
Rch
△S701
(POWER)
250V T500mA
△F701
D709
MA1120
12V ZENER
D605,606
1SS254
D701~704
SVDS1R1K2
RECTIFIER
Q701
2SA684NC
STABILIZER
Q701
J701
AC23V
AC18V
J702
J703
701
702
AC220V
50/60Hz
IC701
AN7812
STABILIZER
D705~708
SVD1SR35200
RECTIFIER
E P.T CIRCUIT
T701
S501
AUX
S502
TAPE
S503
PHONO
S504
TUNER
ON
OFF
Q501
Q502
J504
IC501
IC501
AN6552F
G.EQ AMP
VR501
(BALANCE)
+B
-B
+B
J404
J405
D404
LN846RP
DUBBING IND.
I
S505
DUBBING
S506
DOLBY
MIC
Q531
Q532
Q531
2SC3312
MIC AMP
Q532
2SA1309A
MIC AMP
G MIC CIRCUIT
Q541
Q543
Q545
Q547
Q549
Q542
Q544
Q546
Q548
Q550
VR503-1 50KG
VR504-1 50KG
VR505-1 50KG
VR506-1 50KG
VR507-1
VR503-2
VR504-2
VR505-2
VR506-2
VR507-2
(100Hz)
(330Hz)
(1kHz)
(3.3kHz)
(10kHz)
Q541~550
2SC3312
G.EQ AMP
H G.EQ CIRCUIT
Q451
Q451
2SC3311
METER AMP
IC 451
AN6884
LED DRIVER
IC451
D451
D452
D453
D454
D455
D451~455
LN846RP
LEVEL METER
J506

Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

■ PARTS LOCATION OF RECORD PLAYER


A
B
61
62
63
64
65
66
67
68
69
70
75
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77
70
79
72
73
72
74
71
N20
(S71)
N20
80
81
86
94
87
(S72)
82
84
83
88
89
90
92
N24
N21
N24
N21
N24
N21
N24
93
91
N23
N22
φ9 7.5mm
Motor
62
63
64
72
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72
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94
87
88
89
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83
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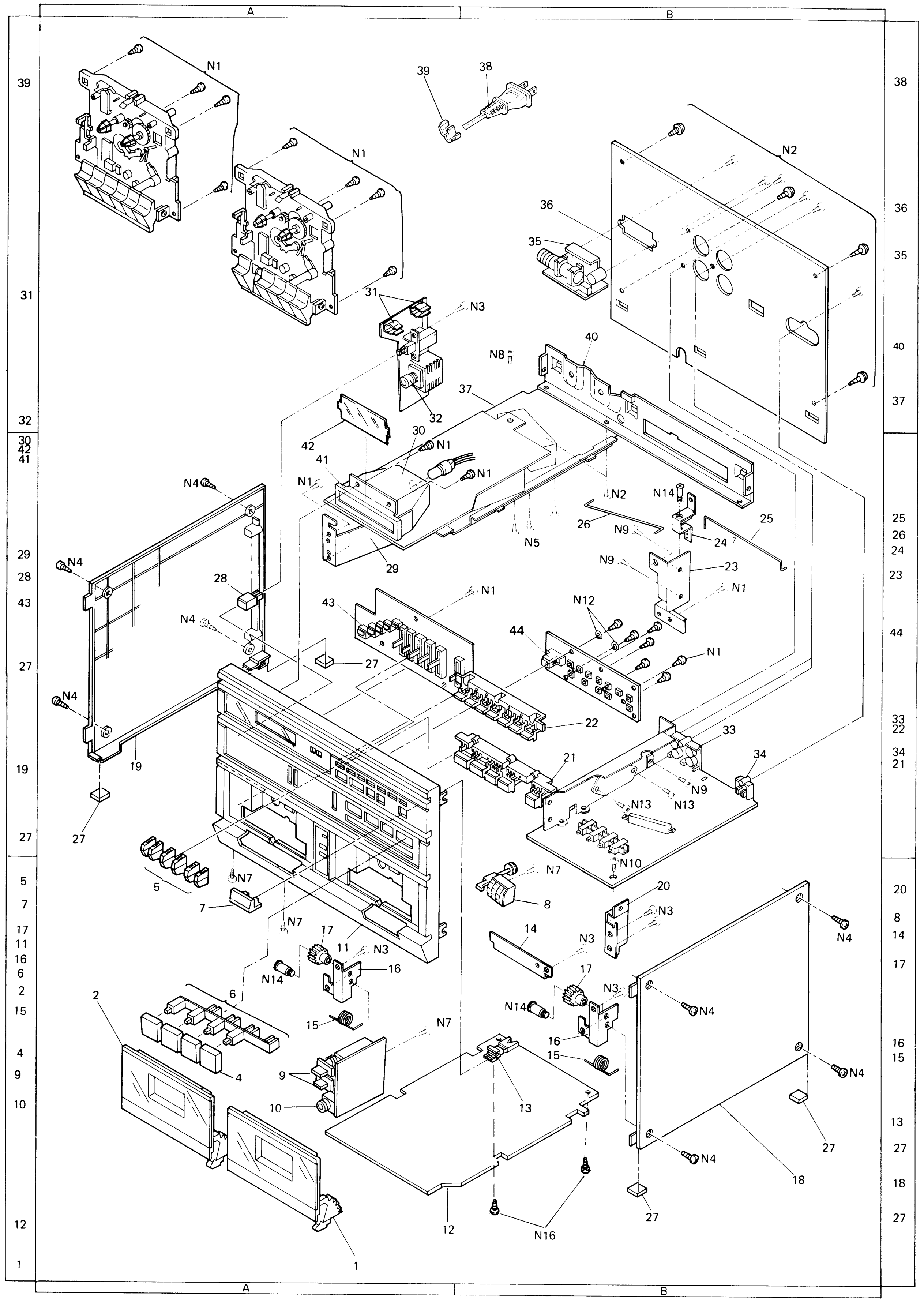
91

■ PARTS LOCATION OF CABINET AND CHASSIS


A
B
N1
N1
39
38
N2
36
35
31
N3
N8
40
37
42
41
30
N1
N1
32
N1
N4
N2
N14
25
26
N9
24
N5
29
N9
23
N1
N4
28
N1
43
N12
44
N1
N4
27
N4
22
33
34
19
21
N9
N13
N13
27
N10
N7
5
7
N7
8
20
N3
17
11
N3
14
N3
16
N14
17
N3
N4
6
15
N7
N14
16
15
N4
2
9
13
N4
4
10
27
12
N16
18
1
N4
27
39
31
32
30
42
41
29
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43
27
19
27
5
7
17
11
16
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2
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12
1
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36
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■ REPLAC

Notes:

1. Part numbe
   Please use t
2. Important s
   Component
   important f
   use only ma

Ref.No.
INTEGRATED CIRCUI
IC61
IC71
IC201
IC202
IC203
IC301
IC302
IC451
IC501
IC601
IC701
TRANSISTORS
Q201,203,204
Q202
Q205
Q206～208, 212～214
Q209～211,215, 309,532,601
Q301～308, 311～316,318, 404,451
Q317
Q401～403
Q405
Q501,502,531, 541～550
Q602
Q701
DIODES
D71
D201,202
D203,205～208, 211,216,217, 301,302,401, 402,407,408

● CABINET AN

Ref.No.	Part N
CABINET AND CHASSI	
1	SYE1099
2	SYE1100
4	SBC662
5	SBD118
6	SUB240
7	SBD98-1
8	SJN13
9	SBC315-4T
10	SJJ63D
11	SGYGD30-KE
12	SKU11300
13	SHR9774
14	SGEGD30L-K
15	SMQ60016
16	SMQ30025-1
17	SMQ4096
18	SKM7560U
19	SKM7550U
20	SUW2942

REPLACEMENT PARTS LIST

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. The "Ⓢ" mark is service standard parts and may differ from production parts.
4. Bracketed indications in Ref. No. columns specify the area.
5. Parts without these indications can be used for all areas.
   The parenthesized numbers in the column of description stand for the quantity per set.

Ref.No.	Part No.	Description
INTEGRATED CIRCUITS		
IC61	SVITA7629P	Integrated Circuit
IC71	AN6610	Integrated Circuit
IC201	AN7273B	Integrated Circuit
IC202	SVIUPC1161C3	Integrated Circuit
IC203	UPD1708G561	Integrated Circuit
IC301	AN6558F	Integrated Circuit
IC302	AN7010K	Integrated Circuit
IC451	AN6884	Integrated Circuit
IC501	AN6552F	Integrated Circuit
IC601	STK4131-2M	Integrated Circuit
IC701	AN7812	Integrated Circuit
TRANSISTORS		
Q201,203,204	2SC1675-L	Transistor
Q202	2SC1674M	Transistor
Q205	2SC829-C1	Transistor
Q206～208, 212～214	2SC1815Y	Transistor
Q209～211,215, 309,532,601	2SA1309AR	Transistor
Q301～308, 311～316,318, 404,451	2SC3311-Q	Transistor
Q317	2SC1583-G	Transistor
Q401～403	2SD592NC-R	Transistor
Q405	UN4211	Transistor
Q501,502,531, 541～550	2SC3312R	Transistor
Q602	2SC3311AR	Transistor
Q701	2SA684-RNC	Transistor
DIODES		
D71	MA165	Diode
D201,202	MA325G-Y	Diode
D203,205～208, 211,216,217, 301,302,401, 402,407,408	1SS254	Diode

Ref.No.	Part No.	Description
DIODES		
D204	SVDKV1236Z	Diode
D209,210	MA4062-M	Diode
D219	LN250RPH	LED
D303,304 Ⓢ	MA162A	Diode
D404,451～455	LN846RP	LED
D405	SVDMC921	Diode
D601,602,603, 605,606 ⚠	1SS254	Diode
D604	SVD1SR35200	Diode
D701～704 Ⓢ⚠	SVDSR1K2	Diode
D705～708	SVD1SR35200	Diode
D709	MA1120-M	Diode
COILS and TRANSFORMERS		
L201	SLF6C1-10	AM Bar Antenna
L202	ELEPK1R2MA	Choke
L203	SLA2B1-1M	AM Antenna
L204	SL02B7-M	AM OSC
L301,302	SLM1C77-K	L.P.F
L303,304	SLQU222-2Y	Choke
L305,306	QLM9Z10K	L.P.F
L401	SL09C9-K	Bias OSC
T201	SLI2B101-M	AM IFT
T202	SLI4B108-Z	FM IFT
T203	SLI4B511-Z	FM IFT
T204	SLI4B513-Z	FM IFT
T701 ⚠	SLT5M453-W	Power Trans
CERAMIC FILTERS		
CF201	SVFE107MS2-A	FM,10.7MHz
CF202	SVFSFZ450F7L	AM,450kHz
CRYSTAL		
X201	SVQ49U452-T	4.5MHz
VARIABLE RESITORS		
VR71	SVNAA13B2-Q	Variable Resistor
VR72	SVNAA23B2-Q	Variable Resistor
VR201	SVNAA53B2-Q	Variable Resistor
VR301～306	EVND4AA00B54	Variable Resistor 50kΩ (B)
VR401,402	EVND4AA00B25	Variable Resistor 200kΩ (B)
VR403	EVND4AA00B53	Variable Resistor 5kΩ (B)

Ref.No.	Part No.	Description
VARIABLE RESITORS		
VR501	EWANF5X15G15	Variable Resistor 100kΩ (G)
VR502	EWAQA6X15A15	Variable Resistor 100kΩ (A)
VR503～507	EWANA5X15G54	Variable Resistor 50kΩ (G)
VARIABLE CAPACITORS		
CT201	ECRHA007A11	Variable Capacitor
CT202	ECRHA010A11	Variable Capacitor
FLUORESCENT DISPLAY TUBE		
LCD201	SALHLC9150-2	
COMPONENT COMBINATIONS		
Z201,202	EXRP181K473C	180p,47kΩ
Z501,502	EXRP120K824T	12pF,820kΩ
LAMP		
PL201	XAMR78S250	
FUSE		
F701 ⚠	XBA2C05TR0	250V,T500mA
SWITHES		
S1,4	SMQT1451	Motor Switch
S2,5	SMQT1466	Mute Switch
S3,6	SMQT1462	Nor/Me DET Switch
S71	SSS138	Phono Speed
S72	SSP66	Phono Motor Switch
S201～212	SSG13	Preset Switch
S301	SSS163	Rec/Play Switch
S401	SSS153	Beat Proof Switch
S501～504	SSH493	Input Switch
S505,506	SSH1159	Dubbing/Dolby Switch
S701 ⚠	SSH1071	Power Source

● CABINET AND CHASSIS PARTS

Ref.No.	Part No.	Description
CABINET AND CHASSIS PARTS		
1	SYE1099	Cassette Lid (1)
2	SYE1100	Cassette Lid (1)
4	SBC662	Button, Input Selector (4)
5	SBD118	Knob,Balance,Grafic (6)
6	SUB240	Connection Rod, Input Selector (4)
7	SBD98-1	Knob,Volume (1)
8	SJN13	Tape Counter (Tape2 only) (1)
9	SBC315-4T	Button,dB, Tape Selector (2)
10	SJJ63D	Mic Jack (1)
11	SGYGD30-KE	Front Panel Ass'y (1)
12	SKU11300	Bottom Bord (1)
13	SHR9774	Joint, Volum (1)
14	SGEGD30L-KK	Plate,Volume (1)
15	SMQ60016	Spring, Cassette Holder (2)
16	SMQ30025-1	Plate,Cassette Holder (2)
17	SMQ4096	Cogwheel, Cassette Holder (2)
18	SKM7560U	Side Cover (Right) (1)
19	SKM7550U	Side Cover (Left) (1)
20	SUW2942	Plate Main P,C,B (1)

Ref.No.	Part No.	Description
CABINET AND CHASSIS PARTS		
21	SBC670-1	Button,Selector (1)
22	SBC669	Button, Preset Tuning (1)
23	SUW2941	Plate,Main P,C,B (1)
24	SMQ30024	Angle,Spoke (1)
25	SUB238	Spoke (1)
26	SUB239	Spoke (1)
27	SHS3066	Felt (4)
28	SBC489	Button,Power (1)
29	SUW2943-1	Plate,Tuner P,C,B (1)
30	SMP384-1	Lamp Cover (1)
31	SJT347	Fuse Holder (2)
32	SJJ71E	Phone Jack (1)
33	SJF4431-1	Speaker Terminal (1)
34	SJF3207-5N	Pin Terminal (1)
35	SJF4315	Antenna Terminal (1)
36	SGP6610E	Rear Cover (1)
37	SML144-1	Bottom Plate (1)
38 ⚠	SJA138-3	Power Cord (1)
39	SHR127	Clamp Cord (1)
40	SUW2932-1	Bracket (1)
41	SHR9732	Holder,LCD (1)
42	SDU249-2	Filter,LCD (1)
43	SMP392	Case,LED (1)
44	SMP396	Case,LED(D219) (1)

Ref.No.	Part No.	Description
SCREWS		
N1	XTB3+10GFR	Tapping,⊕3×10 (24)
N2	XTW3+10T	Tapping,⊕3×10 (12)
N3	XTB3+8G	Tapping,⊕3×8 (8)
N4	XTB4+12JFZ	Tapping,⊕4×12 (8)
N5	XTB4+8F	Tapping,⊕4×8 (4)
N7	XTWS3+10Q	Tapping,⊕3×10 (5)
N8	XTB3+8J1	Tapping,⊕3×8 (3)
N9	XTB3+8J	Tapping,⊕3×8 (2)
N10	XTBS3+8JFR1	Tapping,⊕3×8 (1)
N11	XTW3+8T	Tapping,⊕3×8 (2)
N12 Ⓢ	XWA3B	Washer,3ϕ (2)
N13	XTB3+16J	Tapping,⊕3×16 (2)
N14	SNE270	Cabinet (3)

Ref.No.	Part No.	Description
RECORD PLAYER PARTS		
61	SYE1026-2	Dust Cover (1)
62	SJY4054-4	Turntable Mat (1)
63	SJYGD20-KM2	Turntable Ass'y (1)
64	SJY90080-1	Flat Belt (1)
65	EPA645STC	Tone Arm (1)
66	EPC13STH	Cartridge With Stylus (1)
67	EPS41ST	Stylus (1)
68	SJY5224-1	Lifter (1)
69	SJY5218	Pu Rest (1)
70	SBH9383	Hinge (2)
71	SJY5227	Motor Bracket (1)
72	SHG9260	Motor Rubber (2)
73	MMNV400-KM	Motor Ass'y (1)
74	SBN1132	Slide Knob (1)
75	SJC5	Battery Terminal(-) (1)
76	SJB9005-1	Battery Lid (1)
77	SJC3	Battery Terminal(+) (1)

Ref.No.	Part No.	Description
RECORD PLAYER PARTS		
79	SHG9246-1	Rubber Cap (1)
80	SJY1051U	Player Board (1)
81	SJY5226-1	Tone Arm Plate (1)
82	SJYGD30-KM3	Pu Moving Plate (1)
83	SUS791	Torsion Spring (1)
84	SJY5223	Operating Plate, Switch (1)
86	SUS790	Torsion Spring (1)
87	SJY486	Gear Ass'y (1)
88	SJYGD30-KM1	Operating Plate (1)
89	SJY5225	Actuating Plate (1)
90	SJYGD30-KM	Player Chassis (1)
91	SUD467	Spacer (1)
92	SJYGD30-KM4	Flowting Plate (1)
93	SUW2967	Bracket (1)
94	SHR420	Lock Pin (1)

Ref.No.	Part No.	Description
SCREWS and WASHERS		
N20	XTB3+10G	Tapping,⊕3×10 (2)
N21	XTB3+8J	Tapping,⊕3×8 (5)
N22	XTB3+14J	Tapping,⊕3×14 (1)
N23	XWE3F20	Washer,ϕ3 (1)
N24	XTW3+10Q	Tapping,⊕3×10 (4)
ACCESSORIES		
A1	SQF12552	Instruction Book (1)
A2	SSA269	Feeder Antenna (1)
A3	SJY5018-1	EP Adaptor (1)
A4	XST6D25FB	Transit Screw (2)
PACKINGS		
P1	SPG5445	Carton Box (1)
P2	SPS4590	Pad,Front Bottom (1)
P3	SPS4591	Pad,Rear Bottom (1)
P4	SPS4592	Pad,Front Upper (1)
P5	SPS4593	Pad,Rear Upper (1)
P6	SPS4623-3	Pad,Turntable (1)
P7	SPP226	Set Cover (1)
P8	SPH6400	Sheet,Protection (2)

Printed in Japan
85073100 Ⓝ TM/TN

ORDER NO. HAD8507213C2–A

AM/FM Stereo Radio with Cassette Tape Deck and Record Player

SG-D30

- This booklet contains the specifications and adjusting procedures for SG–D30, written in German and French.
- File this manual together with the SG–D30 service manual (Order No. HAD8507213C2).

- Das vorliegende Büchlein enthält die technische Daten und Justierverfahren für den SG–D30 in deutscher und französischer Sprache.
- Bewahren Sie das Büchlein zusammen mit der Bedienungsanleitung für des SG–D30 auf (Bestell-Nr. HAD8507213C2).

- Cette brochure contient les spécifications et les procédures de mises au point pour le SG–D30, écrites en allemand, et en francais.
- Classer ce manuel en mêmetemps qu'avec le manuel de service du SG–D30 (N° d'order : HAD8507213C2).

DEUTSCH

■ TECHNISCHE DATEN

(Die technischen Daten können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ VERSTÄRKERTEIL

Ausgangsleistung	
Dauerton-Ausgangsleistung bei 1 kHz beide Kanäle ausgesteuert	2 × 23W (5% Klirr, 8 Ω)
Musikleistung	2 × 50W (10% Klirr, 8Ω)
Gesamtklirrfaktor	
halbe Nennleistung bei 1 kHz	0,07% (8 Ω)
Leistungsbandbreite	
beide Kanäle ausgesteuert bei −3 dB	15 Hz ~ 45 kHz (8 Ω)
Frequenzgang	
CD/AUX	20 Hz ~ 30 kHz (−3 dB)
Micro (MIC)	60 Hz ~ 15 kHz (−3 dB)
Eingangsempfindlichkeit und -impedanz	
CD/AUX	150 mV/22 kΩ
Micro (MIC)	1,5 mV/10 kΩ
Equalizer	100 Hz, 330 Hz, 1 kHz, 3,3 kHz, 10 kHz, ±10 dB
Lautsprecherimpedanz	8 Ω ~ 16 Ω

■ UKW-TUNERTEIL

Wellenbereich	87,50 ~ 108,00 MHz (50 kHz-Schritte)
Eingangsempfindlichkeit	17,2 dBf (2,0 µV, IHF '58)
Geràuschabstand 26 dB	1,5 µV (40 kHz mod., 75 Ω)
Gesamtklirrfaktor	
1 kHz	0,15% (mono), 0,4% (stereo)
Geräuschabstand	
Mono	68 dB (76 dB nach IHF)
Frequenzgang	20 Hz ~ 15 kHz (+0,5 dB ~ −2 dB)
Spiegelfrequenz-Dämpfung bei 98 MHz	45 dB
Übersprechdämpfung	40 dB (1 kHz), 35 dB (10 kHz)
Antennenanschluß	75 Ω (unsymmetrisch)

■ MW-TUNERTEIL

Wellenbereiche	522 ~ 1611 kHz (9-kHz-Schritte) 530 ~ 1620 kHz (10-kHz-Schritte)
Eingangsempfindlichkeit (500 mW)	100 µV/m (999 kHz)
Spiegelfrequenz-Dämpfung	40 dB (999 kHz)

■ TONBANDTEIL

Typ	Stereo-Doppelcassettendeck mit Bandendabschaltung
Spurlage	4 Spuren/2 Kanäle
Aufnahme/Wiedergabe	Tonkopf aus Hartpermalloy
Wiedergabe	Tonkopf aus Hartpermalloy
Löschen	2-Spalt-Löschkopf aus Ferrit
Motoren	elektronisch geregelter Gleichstrommotor
Aufnahmesystem	Wechselstrom-Vormagnetisierung, 85 kHz
Löschsystem	Wechselstrom-Löschung, 85 kHz
Bandgeschwindigkeit	4,8 cm/s
Frequenzgang	
Normal	30 Hz~15 kHz (DIN) 40 Hz~14 kHz +3, −6 dB
Metal	30 Hz~17 kHz (DIN) 40 Hz~16 kHz +3, −6 dB
Geràuschspannungsabstand	
ohne Dolby	56 dB (A-WTD)
mit Dolby	65 dB (CCIR)

Gleichlaufschwankungen	0,1% (bewertet)
Umspulzeit	ca. 150 Sek. (für Cassette C-60)

■ PLATTENSPIELERTEIL

Plattenspielersystem	Riemenantrieb
Plattenspierlermotor	Gleichstrommotor
Plattenteller	28 cm
Plattentellerdrehzahl	33-1/3 U/min. und 45 U/min.
Tonabnehmer	Keramischer-Tonabnehmer (EPC-13STH)
Abtastnadel	Saphir-Spitze (EPS-41ST)
Auflagekraft der Abrtastnadel	5,5 g

■ ALLGEMEINE DATEN

Netzspannung	
Für Kontinentaleuropa	Wechselstrom 50 Hz/60 Hz, 220V
Batterien	DC 4,5V (3 Batterien der Größe AA; Panasonic UM-3 o.ä.)
Leistungsaufnahme	130 W
Abmessungen (B×H×T)	380 × 319,5 × 346 mm
Gewicht	7,2 kg

■ MESSUNGEN UND JUSTIERUNGEN

MW/UKW

Einstellungen der Bedienelemente und zu verwendende Geräte.

- MW/UKW-Meßsender (MW/UKW-MS)
- Stereo-Modulator
- Verzerrungs-Analysator
- Oszilloskop
- Elektronische Wechselstrom- und Gleichstrom-Voltmeter (EVM).
- Frequenzzähler
- Drosselspule (100μH)
- Widerstand (100kΩ)
- Keramischer Kondensator (200pF)
- Testband QZZCWAT QZZCFM

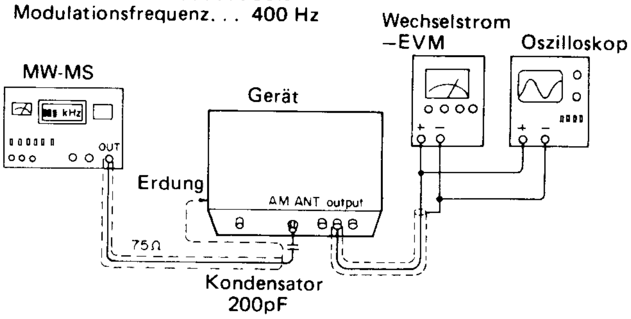
Anmerkung: Für **T201** (MW-ZFT) und **L204** (MW—OSZ.-Spule) werdeven justiert Ersatzteil geliefert. Dien Kern dieses Teils daher nicht drehen.

AM (MW)-HF-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "**AM (MW)**" einstellen.
3. Die Radiofrequenzanzeige und den Meßsender auf **612 kHz** einstellen.
4. **L203** auf maximale Ausgangsleistung abgleichen.
5. Die Radiofrequenzanzeige und den Meßsender auf **1503 kHz** einstellen.
6. **CT202** auf maximale Ausgangsleistung abgleichen.
7. Die Schritte 3—6. wiederholen.

Anmerkung: Der Antenneneingang-Signalpegel muß so niedrig wie möglich und frei von automatischer Verstärkungsregelung (AGC) sein.

ZUSTAND DES MW-MESSENDERS
Modulation. 30%
Modulationsfrequenz. . . 400 Hz

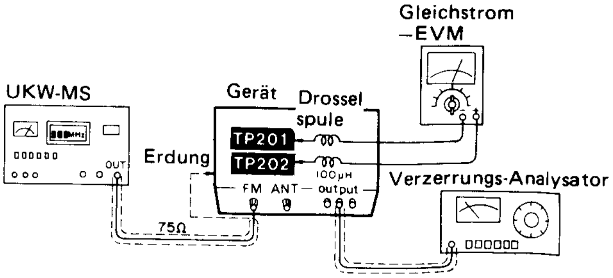


UKW-MONO-VERZERRUNGS-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "**FM (UKW)**" einstellen.
3. Die Radiofrequenzanzeige und den Meßsender auf **100.10 MHz** einstellen.
4. Den Kern von **T203** so justieren, daß die im Signalzustand gemessene Spannung **0 mV (0 ± 30 mV)** im 300mV -Bereich beträgt.
5. **T204** so justieren, daß der Verzerrungsfaktor des linken Kanals minimal wird.
6. Schritte 4 und 5 einige Male wiederholen.
7. Überprüfen, daß die Verzerrungsfaktoren des linken und rechten Kanals fast gleich sind.

Anmerkung: Für die Justierung ist ein Schraubendreher aus Kunststoff zu verwenden.

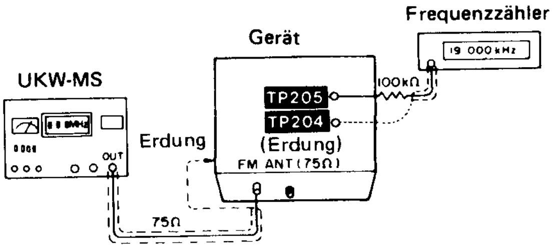
ZUSTAND DES UKW-MESSENDERS
Modulation 100%
Modulationsfrequenz. . . 400 Hz
Ausgangspegel. . . . . 66 dB



UKW-STEREO-JUSTIERUNG (FREIER LAUF)

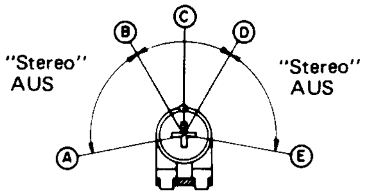
1. Der Testaufbau ist in der Abbildung gezeigt.
2. Den UKW-Betriebsart-Wahlschalter in die "**FM auto**" Position stellen.
3. Die Radiofrequenz-Anzeige und den Meßsender auf **100,10 MHz** einstellen.
4. **VR201** auf **19 kHz ± 30 Hz** auf der Frequenzzähleranzeige justieren.

ZUSTAND DES UKW-MESSENDERS
Modulation. 0
Modulationsfrequenz. . . 0
Ausgangspegel. . . . . 66 dB


Frequenzzähler
Gerät
19 000 kHz
UKW-MS
TP205
TP204
100kΩ
Erdung
(Erdung)
FM ANT (75Ω)
OUT
75Ω

* VERWENDUNG EINES ALTERNATIVSYSTEMS

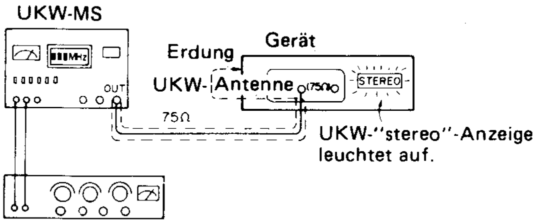
1. Stereosignal vom Meßsender eingeben oder eine Stereo-Sendung empfangen.
2. **VR201** justieren, bis die Stereo-Anzeige aufleuchtet. Den Arm von **VR201** mit Lack sichern, wie in der Abbildung gezeigt.


Ⓑ
Ⓒ
Ⓓ
"Stereo" AUS
"Stereo" AUS
Ⓐ
Ⓔ

VR302

Ⓑ – Ⓓ. . . . . "Stereo"-EIN-Position (Anzeige leuchtet)
Ⓒ. . . . . Punkt der Pilotschaltung justieren.

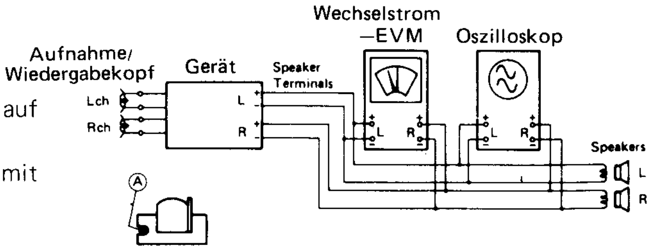
ZUSTAND DES UKW-MESSENDERS
Modulation. 10%
Modulationsfrequenz. . . Pilot (19 kHz)
Ausgangspegel. . . . . 66 dB


UKW-MS
Erdung
Gerät
UKW-Antenne
(75Ω)
STEREO
OUT
75Ω
UKW-"stereo"-Anzeige leuchtet auf.

STEREO-MODULATOR
Pilotsignal auf ON. . . . . 19 kHz
Ausgangs-Betriebsart. . . . L + R

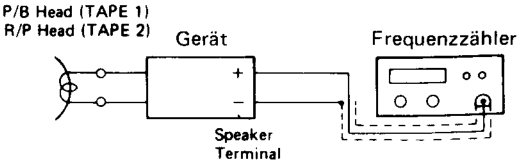
KOPFAZIMUTH-ABGLEICHUNG

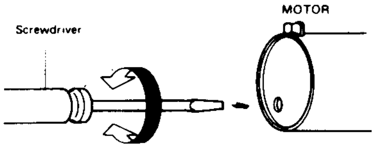
1. Der Testaufbau ist in der Abbildung gezeigt.
2. Wiedergabe-testband QZZCFM. (8 kHz)
3. Schraube Ⓐ für maximale Anzeige für gleichen Ausgang auf beiden Kanälen einstellen.
4. Nach der Abgleichung die Kopfeinstellschraube Ⓐ mit Farbe siegeln.


Wechselstrom –EVM
Oszilloskop
Aufnahme/ Wiedergabekopf
Gerät
Speaker Terminals
Lch
Rch
L
R
Speakers
L
R
Ⓐ

JUSTIERUNG DER BANDMOTOR-GESCHWINDIGKEIT (Band 1/Band 2)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Wiedergabe-Testband QZZCWAT. (3 kHz)
3. Den Drehwiderstand an der Rückseite des Motors (Siehe Abb. 1) auf 2970 Hz (2920 – 3000 Hz) mit dem Band 1 justieren.
4. Den Drehwiderstand an der Rückseite des Motors (Siehe Abb. 1) auf 2950 Hz (2920 – 3000 Hz) mit dem Band 2 justieren.

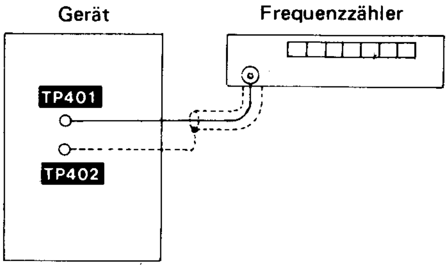

P/B Head (TAPE 1)
R/P Head (TAPE 2)
Gerät
Frequenzzähler
+
–
Speaker Terminal


MOTOR
Screwdriver

(Siehe Abb. 1)

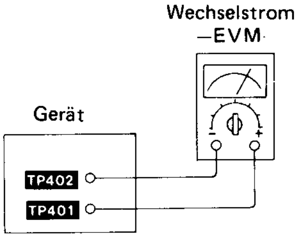
JUSTIERUNG DER VORSPANNUNGS-OSZILLATION (Band 2)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "TAPE (Band)" einstellen.
3. Das Cassettendeck in den Aufnahmezustand versetzen und den "Beat Proof"-Schalter in die "B"-Position stellen.
4. L401 auf 84 – 87 kHz auf der Frequenzzähleranzeige justieren.


Gerät
Frequenzzähler
TP401
TP402

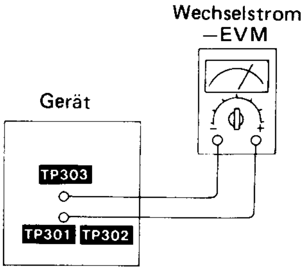
LÖSCHSTROM-JUSTIERUNG (Band 2)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "TAPE (Band)" einstellen.
3. Eine Cassette in das Gerät einsetzen und den Bandsorten-Wahlschalter in die "Metal"-Position stellen.
4. VR403 auf eine Anzeige auf dem elektronischen wechselstrom-voltmeter von 150 ± 5 mV einstellen.


Wechselstrom
—EVM
Gerät
TP402
TP401

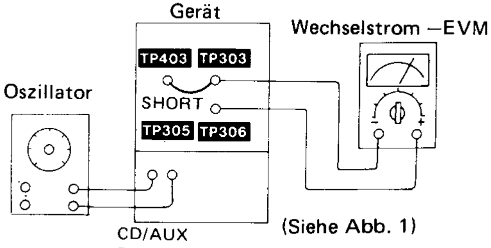
AUFNAHMEVORMAGNETISIERUNG-ABGLEICHUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "TAPE (Band)" einstellen.
3. Eine Cassette in das Gerät einsetzen und den Bandsorten-Wahlschalter in die "Normal"-Position stellen.
4. VR401 (L. Kanal) und VR402 (R. Kanal) auf eine Anzeige auf dem elektonischen wechselstrom voltmeter von 4, 2 ± 0.1 mV einstellen.

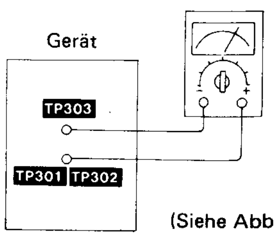

Wechselstrom
—EVM
Gerät
TP303
TP301
TP302

AUFNAHMESTROM-ABGLEICHUNG

1. Der Testaufbau ist in der Abbildung gezeigt. (Siehe Abb. 1)
2. Das Gerät in die CD/AUX-Position einstellen und das Cassettendeck auf STOP schalten.
3. Die Testpunkte TP403 und TP303 kurzshließen.
4. Eine Cassette in das Gerät einsetzen.
5. Ein AF-Oszillatorsignal von (1 kHz) an die CD/AUX-Position anlegen und den Eingang spegel so justieren, daß die Anzeige auf dem elektronischen wechselstrom-voltmeter 410 ± 10 mV boträgt.
6. Der Testaufbau ist in der Abbildung gezeigt. (Siehe Abb. 2)
7. Eine cassette in das Gerät einsetzen und den Bandsorten-Wahlschalter in die "Normal"-Position stellen.
8. VR305 (L. Kanal) und VR306 (R. Kanal) auf eine Anzeige auf dem elektonischen wechselstrom voltmeter von 0.42 ± 0.01 mV einstellen.


Gerät
Wechselstrom —EVM
TP403
TP303
SHORT
TP305
TP306
Oszillator
CD/AUX
TERMINAL

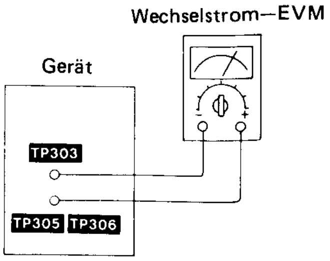
(Siehe Abb. 1)


Wechselstrom —EVM
Gerät
TP303
TP301
TP302

(Siehe Abb. 2)

JUSTIERUNG DER WIEDERGABERSTÄRKUNG (Band 1/Band 2)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Wiedergabe-Testband QZZCFM. (315 Hz)
3. VR301, 302 (Band 1) und VR303, 304 (Band 2) auf eine Anzeige auf dem elektonischen wechselstrom voltmeter von 410 ± 10 mV einstellen.


Wechselstrom—EVM
Gerät
TP303
TP305
TP306

FRANÇAIS

CARACTERISTIQUES

(Sujet à changement sans préavis)

(DIN 45 500)

SECTION AMPLIFICATEUR

Puissance de sortie	
Puissance de sortie continue à 1 kHz les deux canaux en circuit	2 × 23W (DHT 5%, 8Ω)
PSM	2× 50W (DHT 10%, 8Ω)
Distorsion harmonique totale à demi-puissance (1 kHz)	0,07% (8Ω)
Réponse de fréquence les deux canaux en circuit, −3 dB	15 Hz~45 kHz (8Ω)
Réponse de fréquence	
CD/AUX (CD/AUX)	20 Hz~30 kHz (−3 dB)
MICRO (MIC)	60 Hz~15 kHz (−3 dB)
Sensibilité et impédance d'entrée	
CD/AUX	150 mV/22kΩ
MICRO (MIC)	1,5 mV/10kΩ
Compensateur de fréquences	100 Hz, 330 Hz, 1 kHz, 3,3 kHz, 10 kHz, ±10 dB
Impédance de charge	8Ω~16Ω

SECTION SYNTONISATEUR FM

Gamme de fréquence	87,50~108,00 MHz (par palier de 50 kHz)
Sensibilité	17,2 dBf, (2,0 μV, IHF '58)
S/B 26 dB	1,5 μV (40 kHz mod., 75 Ω)
Distorsion harmonique totale	
1 kHz	0.15% (mono), 0.4% (stéréo)
Signal/Bruit	
MONO	68 dB (76 dB, IHF)
Réponse de fréquence	20 Hz~15 kHz, +0,5 dB~ −2 dB
Rejection d'image à 98 MHz	45 dB
Séparation stéréophonique	40 dB (1 kHz), 35 dB (10 kHz)
Bornes d'antenne	75Ω (asymétrique)

SECTION SYNTONISATEUR AM

Gamme de fréquence	522~1611 kHz (par palier de 9 kHz) 530~1620 kHz (par palier de 10 kHz)
Sensibilité (500 mW)	100μV/m (999 kHz)
Réjection d'image	40 dB (999 kHz)

PLATINE CASSETTE

Platine	Platine stéréo à double cassetts et arrêt automatique
Pistes	2 voies, 4 pistes
Enregistrement/lecture	Tête Solid Permalloy
Lecture	Tête Solid Permalloy
Effacement	Tête ferrite 2 entrefers
Moteurs	Moteur CC à asservissement électronique
Système d'enregistrement	Polarisation C.A. 85 kHz
Effacement	Effacement C.A. 85 kHz
Vitesse de bande	4,8 cm/sec.
Réponse de fréquence	
Normal	30 Hz~15 kHz (DIN) 40 Hz~14 kHz +3, −6 dB
Metal	30 Hz~17 kHz (DIN) 40 Hz~16 kHz+3, −6 dB
RAPPORT S/B	
Sans DOLBY NR	56 dB (A-WTD)
Avec DOLBY NR	65 dB (CCIR)
Pleurage et scintillement	0,1% (WRMS)
Temps de bobinage et de rebobinage	environ 150 secondes avec une cassette C-60

SECTION TOURNE-DISQUE

Système	Tourne-disque automatique entraîné par courroie
Moteur phono	Moteur CC à asservissement électronique
Taille de plateau	28 cm
Vitesses de rotation	33-1/3 et 45 t/mn.
Cellule phonoélectrice	Céramique (EPC-13STH)
Pointe de lecture	Saphir (EPS-41ST)
Plage de force d'appui	5,5 g

DIVERS

Alimentation	
Pour l'Europe	CA 50 Hz/60 Hz, 220V
Piles	4,5V de c.c. (3 piles de type "AA", Panasonic UM-3 ou équivalent)
Consommation	130W
Dimensions (L×H×Pr)	380 × 319,5 × 346 mm
Poids	7,2 kg

■ MESURAGES ET REGLAGES

MW/FM

Positionnements des commandes et équipement utilisé

- Générateur de signaux M.F. et A.M. (AM et FM-SG).
- Modulateur stéréophonique
- Analyseur de distorsion
- Oscilloscope
- Voltmètre électronique à C.A. et C.C. (EVM).
- Compteur de fréquence
- Bobine d'amortissement d'arrêt (100μH)
- Résistance (100kΩ)
- Condensateur céramique (200pF)
- Bande étalon QZZCWAT QZZCFM

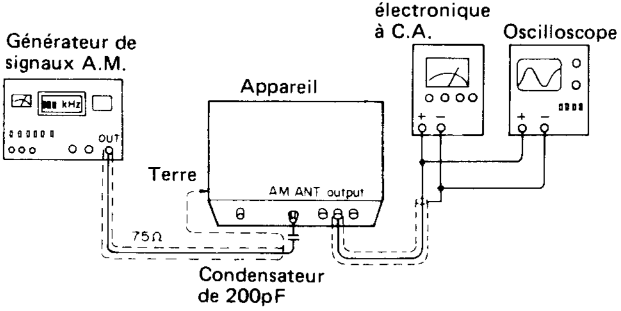
Nota: Pour **T201** (Mod. d'ampl.-Transf. de fréq. inter.) et **L204** (Bobine oscillatrice de mod. d'ampli.) des pièces réglées sont fournies.
Aussi, ne pas tourner les noyaux de ces éléments.

REGLAGE DE A.M.-H.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position "**AM**".
3. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **612 kHz**.
4. Régler **L203** pour une sortie maximale.
5. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **1503 kHz**.
6. Régler **CT202** pour une sortie maximale.
7. Répéter les étapes 3 ~ 6.

Nota: Le niveau d'entrée d'antenne doit être aussi bas que possible étant libéré de la commande automatique de gain.

CONDITION DU GENERATEUR DE SIGNAUX A.M.
Modulation 30%
Fréquence de modulation . . 400 Hz

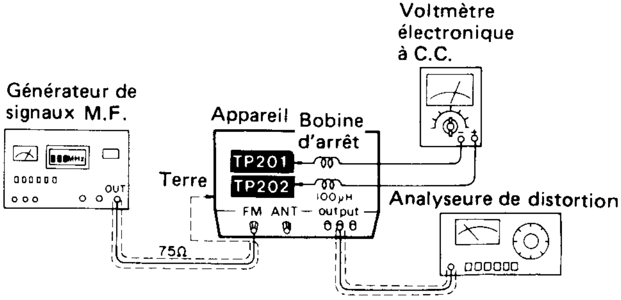

Voltmètre électronique à C.A.
Oscilloscope
Générateur de signaux A.M.
kHz
OUT
Appareil
Terre
AM ANT output
75Ω
Condensateur de 200pF

REGLAGE DE DISTORSION MONOPHONIQUE M.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position "**FM**" (M.F.).
3. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **100,10 MHz**.
4. Régler le noyau de **T203** de telle sorte que la tension mesurée sur le mode de signaux soit de **0 mV (0 ± 30 mV)** dans une plage de 300mV.
5. Ajuster **T204** de telle que le facteur de distorsion du canal de gauche soit minimisé.
6. Répéter les étapes 4 et 5 quelques fois.
7. S'assurer que les facteurs de distorsion du canal de gauche et du canal de droite soient sensiblement les mêmes l'un par rapport à l'autre.

Nota: Le tournevis de réglage utilisé devra être fait en résines.

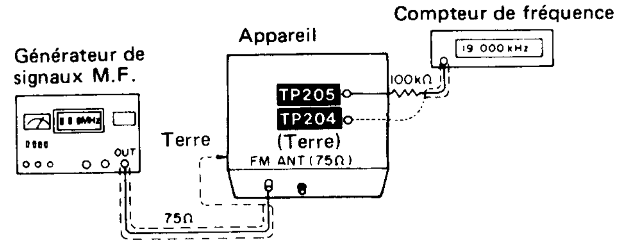
CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation 100%
Fréquence de modulation. . .400 Hz
Niveau de sortie. . . . . 66 dB


Voltmètre électronique à C.C.
Générateur de signaux M.F.
MHz
OUT
Appareil
Bobine d'arrêt
TP201
TP202
100μH
Terre
FM ANT
output
75Ω
Analyseure de distortion

REGLAGE STEREO M.F. (NON-ASSERVIE)

1. Le raccordement de l'équipement d'essai est montré sur la figure.
2. Régler l'appareil sur la position "**FM auto**". (Avec le bouton-sélecteur de mode FM.)
3. Disposer le réglage du générateur de signaux et l'affichage de radiofréquence sur 100,10 MHz.
4. Ajuster **VR201** pour **19 kHz ± 30 Hz** sur le compteur de lecture de fréquences.

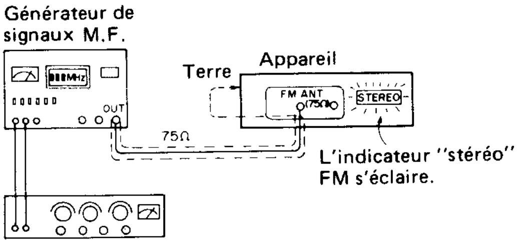
CONDITION DU GENERATEUR
DE SIGNAUX M.F.
Modulation. 0
Fréquence de modulation. . .0
Niveau de sortie. . . . . 66 dB


Compteur de fréquence
Appareil
Générateur de signaux M.F.
19 000 kHz
100kΩ
TP205
TP204
(Terre)
Terre
FM ANT (75Ω)
OUT
75Ω

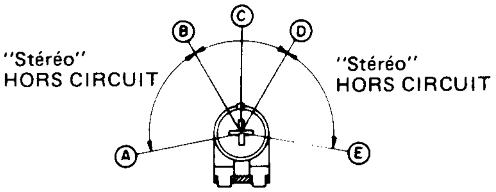
* EN UTILISANT UN SYSTEME ALTERNATIF

1. Appliquer un signal stéréo à partir du générateur ou recevoir une émission stéréo.
2. Ajuster **VR201** jusqu'à ce que l'indicateur stéréo s'éclaire. Coller le bras de **VR201** comme il est montré sur la figure.

CONDITION DU GENERATEUR
DE SIGNAUX M.F.
Modulation 10%
Fréquence de modulation. . .Pilote (19 kHz)
Niveau de sortie. . . . . 66 dB


Générateur de signaux M.F.
Terre
Appareil
FM ANT (75Ω)
STEREO
OUT
75Ω
L'indicateur "stéréo" FM s'éclaire.
MODULATEUR STEREO

Signal pilote sun "ON" (mise en circuit) . . . 19 kHz
Mode de sortie. . . . . Gauche + Droite

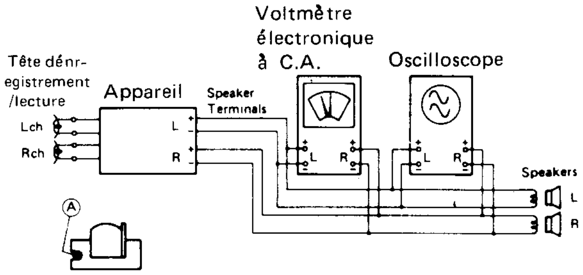

Ⓑ
Ⓒ
Ⓓ
"Stéréo" HORS CIRCUIT
"Stéréo" HORS CIRCUIT
Ⓐ
Ⓔ

VR301

Ⓑ – Ⓓ . . . . . Position de MISE EN CIRCUIT "Stéréo".
(Eclairage de l'indicateur)
Ⓒ. . . . . Point de réglage du circuit pilote.

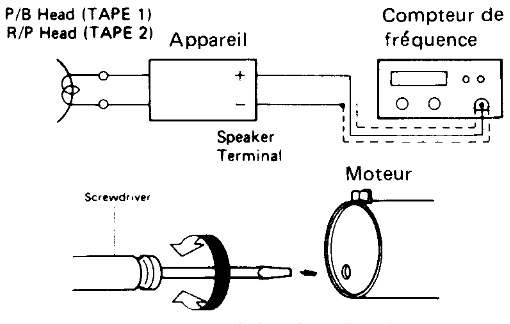
REGLAGE D'AZIMUT DE LA TETE (Bande 2)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Bande de reproduction d'essai QZZCFM (8 kHz)
3. Régler la visⒶafin d'obtenir une indication maximale d'égalisation de sortie des deux canaux.
4. Aprés l'alignement bloquer la visⒶde re'glage de tête avec de la laque.


Voltmètre électronique à C.A.
Oscilloscope
Tête dénr-egistrement /lecture
Appareil
Speaker Terminals
Lch
Rch
L
R
Speakers
L
R
Ⓐ

REGLAGE DE LA VITESSE DU MOTEUR DE LA BANDE (Bande 1/Bande 2)

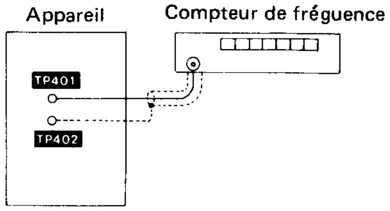
1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Bande de reproduction d'essai QZZCWAT (3 kHz)
3. Ajuster VR à l'arrière du moteur (Se référer à la Fig. 1) pour obtenir 2970 Hz (2920 – 3000 Hz) avec la bande 1.
4. Ajuster VR à l'arrière du moteur (Se référer à la Fig. 1) pour obtenir 2950 Hz (2920 – 3000 Hz) avec la bande 2.


P/B Head (TAPE 1)
R/P Head (TAPE 2)
Appareil
Compteur de fréquence
+
–
Speaker Terminal
Moteur
Screwdriver

(Se référer à la Fig.1)

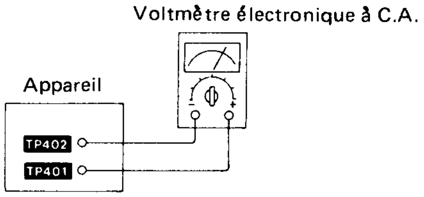
REGLAGE DE L'OSCILLATION DE POLARISATION (Bande 2)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position "TAPE (Bande)".
3. Placer la platine pour cassette sur le mode d'enregistrement et le commutateur d'anti-battement sur la position "B".
4. Ajuster L401 pour obtenir une lecture du compteur de froguences de 84–87 kHz.


Appareil
Compteur de fréguence
TP401
TP402

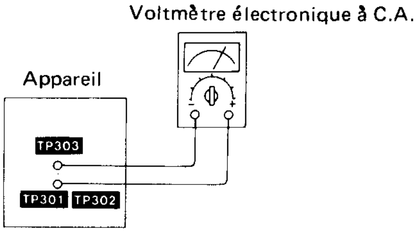
REGLAGE DU COURANT D'EFFACEMENT (Bande 2)

1. Le raccordement de l'équipement déssai est montré sur l'illustration.
2. Rogler l'appareil sur la position "TAPE (Bande)".
3. Placer la platine pour cassette sur le mode d'enregistrement et le sélecteur de bande sur la position pour bande métallisée.
4. Ajuster VR403 pour obtenir 150 ± 5mV sur la voltmètre électronigue à C.A.


Voltmètre électronique à C.A.
Appareil
TP402
TP401

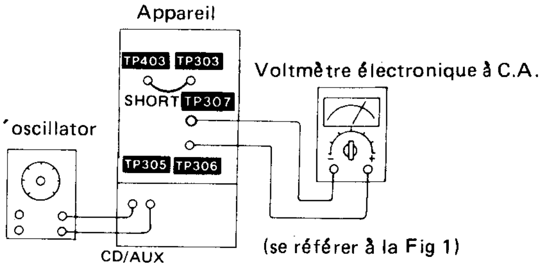
REGLAGE DE POLARISATION D'ENREGISTREMENT (Bande 2)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Rogler l'appareil sur la position "TAPE (Bande)".
3. Placer la platine pour cassette sur le mode d'enregistrement et le sélectour de bande sur la position pour bande normal.
4. Ajuster VR401 (canal de gauche) et VR402 (canal de droite) pour obtenir 4,2 ± 0,1mV sur le voltmétre électronique à C.A.

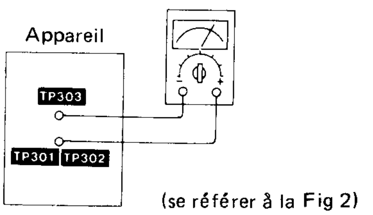

Voltmètre électronique à C.A.
Appareil
TP303
TP301
TP302

REGLAGE DU COURANT D'EFFACEMENT (Bande 2)

1. Le paccordement de l'équipement d'essai est montré sur l'illustration. (Se référer à la Fig. 1)
2. Placer l'appareil sur la position CD/AUX et la platine pour cassette sur le mode d'ARRET.
3. Court-circuiter les points de mesure TP403 et TP303.
4. Placer la platine pour cassette sur le mode d'enregistrement.
5. Four nir un signal à l'oscillateur de frequence audio (1 kHz) dans la position de CD/AUX et régler le niveau d'entrée pour obtenir 410 ± 10mV sur le voltmètre électronique à C.A.
6. Le racordement de l'équipement d'essai est mortré sur l'illustration. (Se référer à la Fig. 2)
7. Placer la platine pour cassette sur le mode d'enregistrement et le séleiteur de bande sur la position pour bande normal.
8. Ajuster VR305 (canal de gauche) et VR306 (canal de droite) pour obtenir 0,42 ± 0,01mV sur le voltmétre électronigue à C.A.


Appareil
TP403
TP303
SHORT
TP307
Voltmètre électronique à C.A.
l'oscillator
TP305
TP306
CD/AUX
TERMINAL

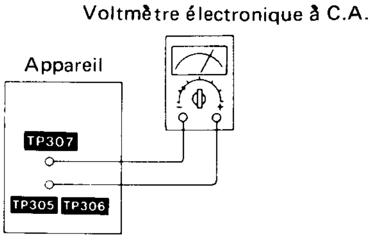
(se référer à la Fig 1)


Voltmètre électronique à C.A.
Appareil
TP303
TP301
TP302

(se référer à la Fig 2)

REGLAGE DE L'AMPLIFICATION DE LECTURE (Bande 1/Bande 2)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Bande de reproduction d'essai QZZCFM (315 kHz)
3. Ajuster VR301, 302 (Bande 1) et VR303, 304 (Bande 2) pour obtenir 410 ± 10mV sur le voltmètre électronique 2 C.A.


Voltmètre électronique à C.A.
Appareil
TP307
TP305
TP306

ORDER NO. HAD8507213C2

Service Manual

AM/FM Stereo Radio with
Cassette Tape Deck and Record Player

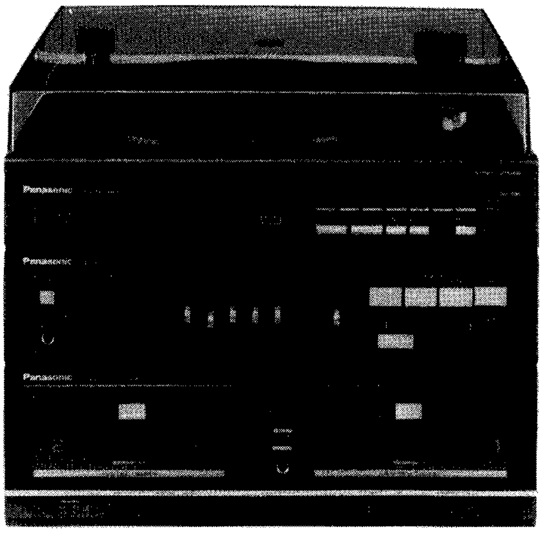
DOLBY SYSTEM

Music System
SG-D30

Color

(K)······Black Type

Color	Area
(K)	[EX]·······Scandinavia



■ SPECIFICATIONS

■ AMPLIFIER SECTION

Power output	
1 kHz continuous power output	
both channels driven	2 × 23W (THD 5%, 8Ω)
MPO	2 × 50W (THD 10%, 8Ω)
Total harmonic distortion	
half power at 1 kHz	0.07% (8Ω)
Power bandwidth	
both channels driven, −3 dB	15 Hz~45 kHz (8Ω)
Frequency response	
CD/AUX	20 Hz~30 kHz (−3 dB)
MIC	60 Hz~15 kHz (−3 dB)
Input sensitivity and impedance	
CD/AUX	150 mV/22kΩ
MIC	1.5 mV/10kΩ
Graphic equalizer	100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±10 dB
Load impedance	8Ω~16Ω

■ FM TUNER SECTION

Frequency range	87.50~108.00 MHz (50 kHz-steps)
Sensitivity	17.2 dBf (2.0 µV, IHF '58)
S/N 26 dB	1.5 µV (40 kHz mod., 75 Ω)
Total harmonic distortion	
1 kHz	0.15% (mono), 0.4% (stereo)
S/N	
MONO	68 dB (76 dB, IHF)
Frequency response	20 Hz~15 kHz, +0.5 dB~−2 dB
Image rejection at 98 MHz	45 dB
Stereo separation	40 dB (1 kHz), 35 dB (10 kHz)
Antenna terminals	75Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	522~1611 kHz (9 kHz-steps) 530~1620 kHz (10 kHz-steps)
Sensitivity (500 mW)	100 µV/m (999 kHz)
Image rejection	40 dB (999 kHz)

■ CASSETTE DECK SECTION

Deck system	Auto stop, double cassette system
Track system	4-track, 2-channel
record/playback	Solid Permalloy Head
playback	Solid Permalloy Head
erasing	Double-gap ferrite head
Motors	DC servo motor
Recording system	AC bias,85kHz
Erasing system	AC erase,85kHz
Tape speed	4.8 cm/sec(1-7/8 ips).
Frequency response	
NORMAL	30 Hz~15 kHz (DIN) 40 Hz~14 kHz +3, −6 dB
METAL	30 Hz~17 kHz (DIN) 40 Hz~16 kHz +3, −6 dB
S/N (Metal type tape)	
Dolby NR out	56 dB (A-WTD)
Dolby NR in	65 dB (CCIR)

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Wow and flutter	0.1% (WRMS)
Fast forward and rewind time	Approx. 150 seconds with C-60 cassette tape

■ PHONO SECTION

Player system	Belt drive, Automatic turntable
Phono motor	DC servo motor
Turntable size	28 cm (11")
Turntable speeds	33 1/3rpm, 45 rpm
Cartridge type	ceramic (Part No. EPC-13STH)
Stylus	sapphire (Part No. EPS-41ST)
Stylus pressure	5.5 g

Note:
Specifications are subject to change without notice.
Weight and dimensions shown are approximate.

■ GENERAL

Power supply	AC 50 Hz/60 Hz, 220V
Batteries (memory back up)	DC 4.5V (3 × "AA" size batteries, Panasonic UM-3 or equivalent)
Power consumption	130W
Dimensions (W×H×D)	380 × 319.5 × 346 mm (14-31/32" × 12-19/32" × 13-5/8")
Weight	7.2 kg (15.9 lb.)

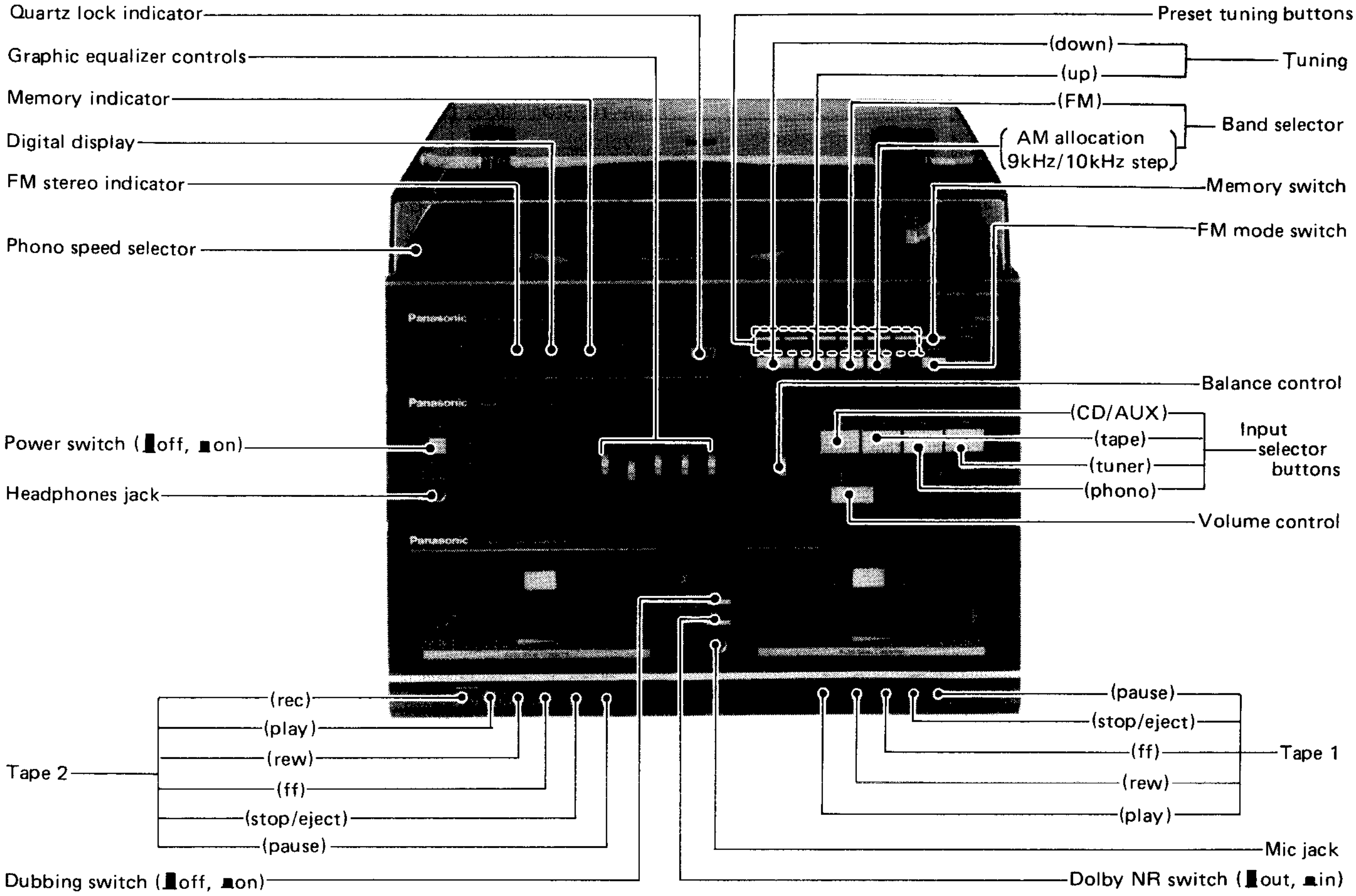
*Specifications are subject to change without notice for further improvement.
Design and specifications are subject to change without notice.
*'Dolby' and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

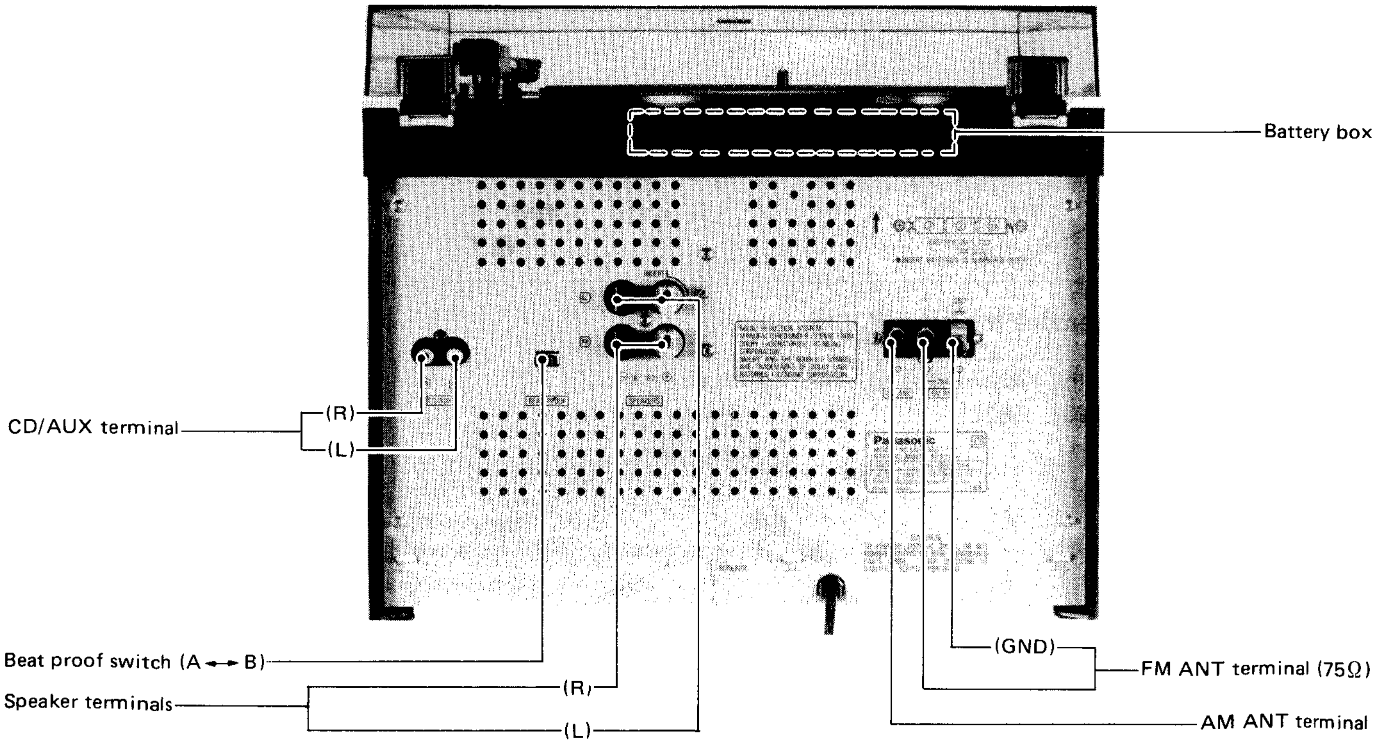
■ CONTENTS

Page
SPECIFICATIONS 1, 2
LOCATION OF CONTROLS 3
PROTECTION CIRCUITRY 4
BEFORE REPAIR AND ADJUSTMENT 4
DISASSEMBLY INSTRUCTIONS .... 4 ~ 6
HOW TO REPLACE IC'S(Small outline type) 7
RESISTORS AND CAPACITORS 8,9
LIQUID CRISTAL DISPLAY(LCD) 9
MEASUREMENTS AND ADJUSTMENTS .... 10 ~ 13
FUNCTION OF TERMINAL (PLL CONTROLLER IC203) 14
WIRING CONNECTION DIAGRAM 15,16

Page
PRINTED CIRCUIT BOARDS .... 17 ~ 19
BLOCK DIAGRAM .... 20 ~ 22
LOCATION OF CASSETTE DECK 23
PARTS LOCATION OF CASSETTE
  TAPE DECK (tape1, tape2) 24,25
SCHEMATIC DIAGRAM .... 26~32
TERMINAL GUIDE OF TRAN SISTORS, DIODES AND IC'S 26
PARTS LOCATION OF RECORD PLAYER 33
PARTS LOCATION OF CABINET AND CHASSIS 34
REPLACMENT PARTS LIST 35,36

■ LOCATION OF CONTROLS

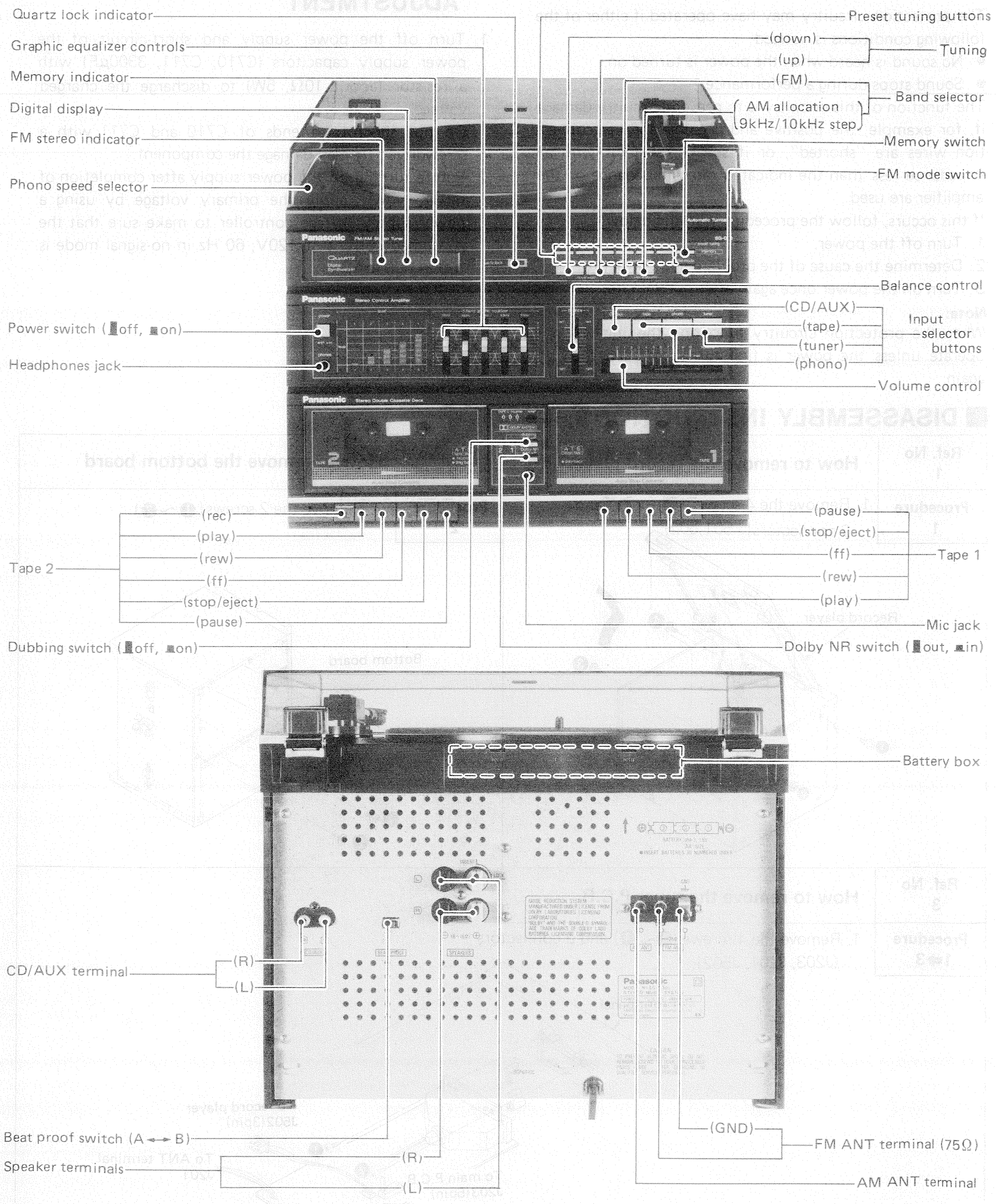

Quartz lock indicator
Graphic equalizer controls
Memory indicator
Digital display
FM stereo indicator
Phono speed selector
Power switch (▮off, ▬on)
Headphones jack
Preset tuning buttons
(down)
(up)
Tuning
(FM)
AM allocation 9kHz/10kHz step
Band selector
Memory switch
FM mode switch
Balance control
(CD/AUX)
(tape)
(tuner)
(phono)
Input selector buttons
Volume control
Tape 2
(rec)
(play)
(rew)
(ff)
(stop/eject)
(pause)
Dubbing switch (▮off, ▬on)
(pause)
(stop/eject)
(ff)
(rew)
(play)
Tape 1
Mic jack
Dolby NR switch (▮out, ▬in)
Panasonic


Battery box
CD/AUX terminal
(R)
(L)
Beat proof switch (A ◂▸ B)
Speaker terminals
(R)
(L)
(GND)
FM ANT terminal (75Ω)
AM ANT terminal
Panasonic

Beat proof switch contens

This switch is to be used when recording AM broadcasts. If any regularly recurring noise is heard during the recording, set this switch to the "A" or "B" position (i.e., to the position where the least noise is heard).
This switch is only effective for recording AM broadcasts.

LOCATION OF CONTROLS


Quartz lock indicator
Graphic equalizer controls
Memory indicator
Digital display
FM stereo indicator
Phono speed selector
Preset tuning buttons
(down)
(up)
Tuning
(FM)
Band selector
AM allocation
9kHz/10kHz step
Memory switch
FM mode switch
Balance control
(CD/AUX)
(tape)
(tuner)
(phono)
Input selector buttons
Volume control
Power switch (▮off, ▄on)
Headphones jack
(rec)
(play)
(rew)
(ff)
(stop/eject)
(pause)
Tape 2
(pause)
(stop/eject)
(ff)
(rew)
(play)
Tape 1
Mic jack
Dubbing switch (▮off, ▄on)
Dolby NR switch (▮out, ▄in)
Battery box
CD/AUX terminal
(R)
(L)
Beat proof switch (A ←→ B)
Speaker terminals
(R)
(L)
(GND)
FM ANT terminal (75Ω)
AM ANT terminal

Beat proof switch contens

This switch is to be used when recording AM broadcasts. If any regularly recurring noise is heard during the recording, set this switch to the "A" or "B" position (i.e., to the position where the least noise is heard).
This switch is only effective for recording AM broadcasts.

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

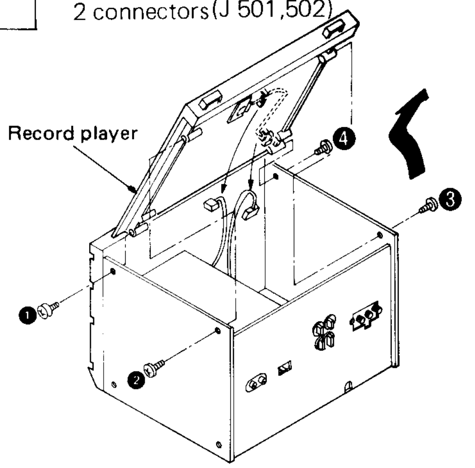
Note:
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ BEFORE REPAIR AND ADJUSTMENT

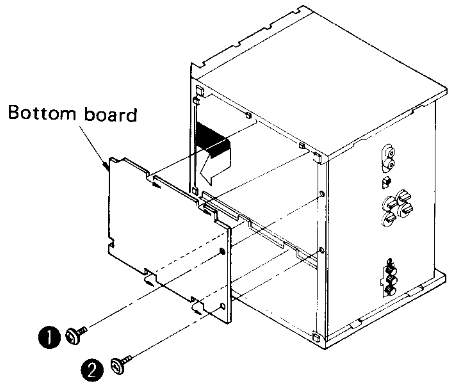
1. Turn off the power supply and short-circuit of the power supply capacitors (C710, C711, 3300μF) with a resistor (about 10Ω, 5W) to discharge the charged voltage.
   Do not short both ends of C710 and C711 with a screwdriver. It may damage the component.
2. Before turning on the power supply after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 120V, 60 Hz in no-signal mode is 100 ~ 300 mA.

■ DISASSEMBLY INSTRUCTIONS

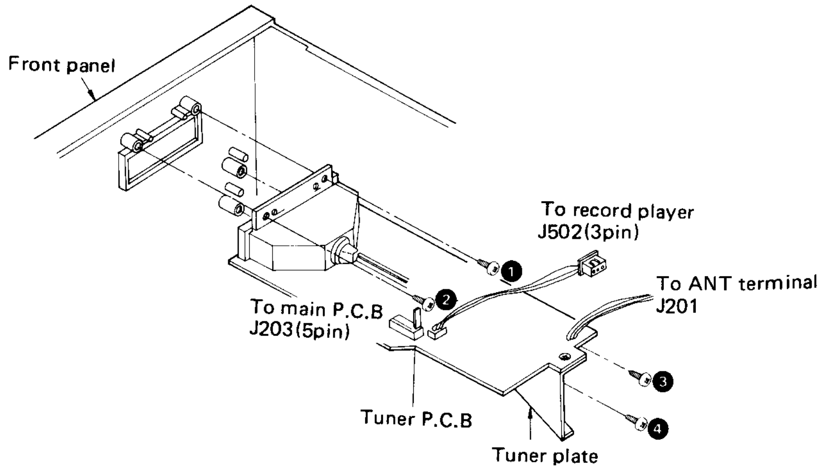
Ref. No 1	How to remove the record player
Procedure 1	1. Remove the 4 screws (❶ ~ ❹) and 2 connectors (J 501,502)



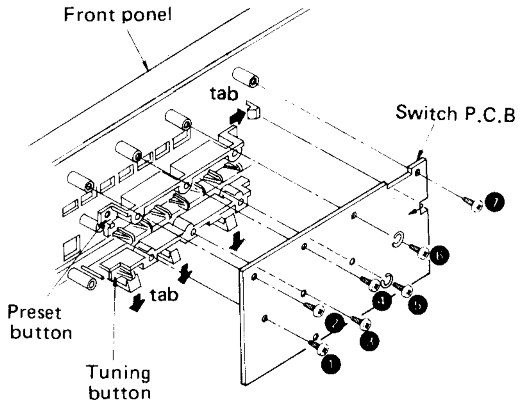
Ref. No 2	How to remove the bottom board
Procedure 2	1. Remove the 2 screws (❶ ~ ❷)



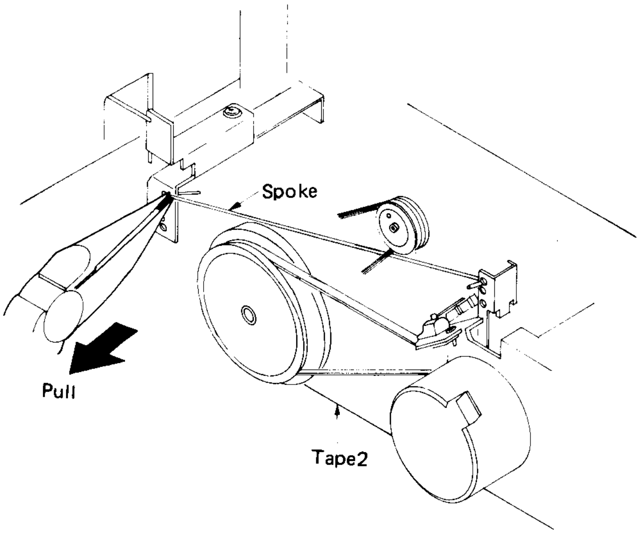
Ref. No 3	How to remove the tuner P.C.B.
Procedure 1➡3	1. Remove the 4 screws (❶~ ❹) and 3 connectors (J203, J201, J502).



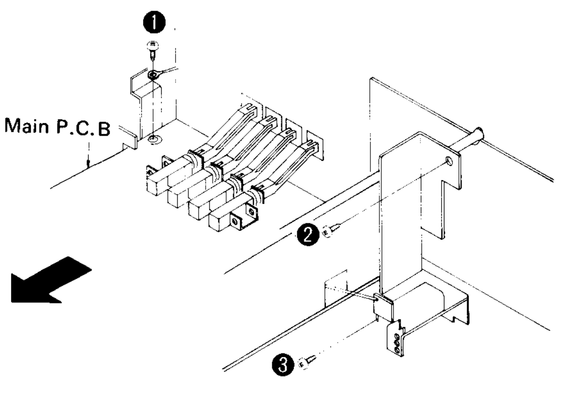
Ref. No 4	How to remove the switch P.C.B.
Procedure 1 ➡4	1. Remove the 7 screws (❶～❼) and 4 tabs.


Front ponel
tab
Switch P.C.B
❼
❻
❺
❹
❸
❷
❶
tab
Preset button
Tuning button

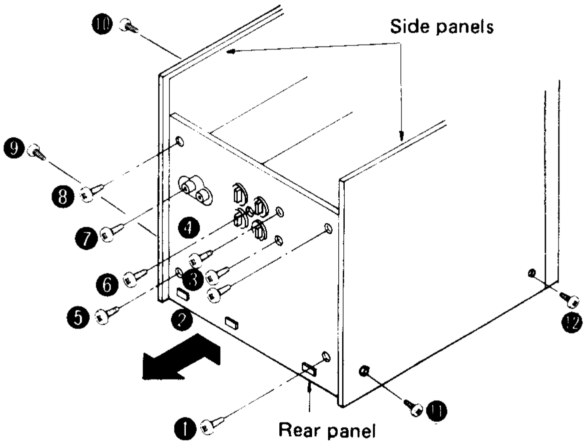
4. Remove the spoke of tape 2.


Spoke
Pull
Tape2

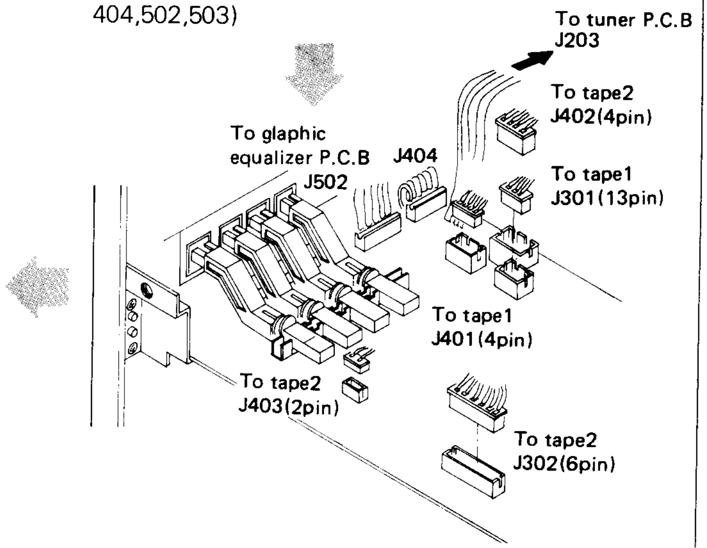
5. Remove the 3 screws (❶～❸)
Pull the main P.C.B.


❶
Main P.C.B
❷
❸

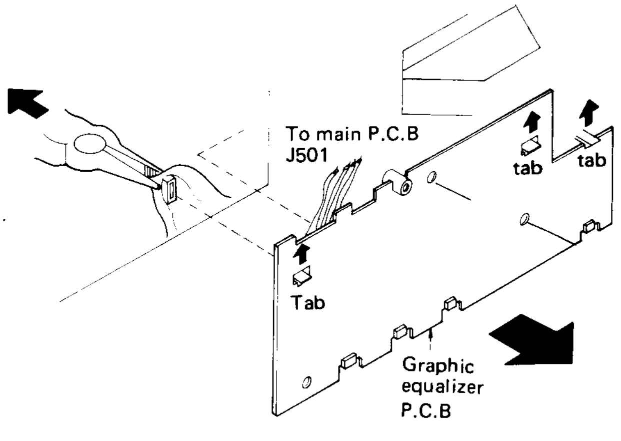
Ref. No 5	How to remove the main P.C.B.
Procedure 1 ➡5	1. Remove the 12 screws.(❶～⓬). 2. Remove the rear panel and side panels.


❿
Side panels
❾
❽
❼
❹
❻
❸
❺
❷
⓬
❶
⓫
Rear panel

3. Remove the 9 connectors (J 301,302,401,402,403, 404,502,503)


To tuner P.C.B J203
To tape2 J402(4pin)
To glaphic equalizer P.C.B J502
J404
To tape1 J301(13pin)
To tape1 J401(4pin)
To tape2 J403(2pin)
To tape2 J302(6pin)

Ref. No 6	How to remove the graphic equalizer P.C.B.
Procedure 1 ➡5 ➡6	1. Remove the 6 knobs. 2. Remove the 3 screws (❶～❸)and 3 tabs

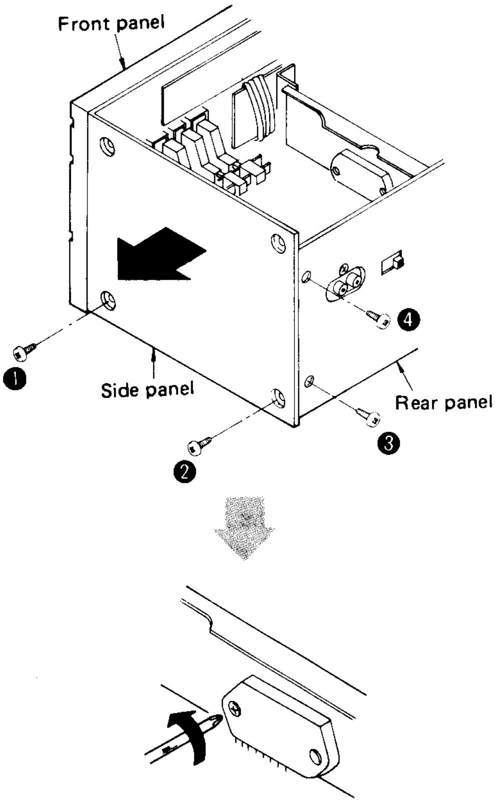

To main P.C.B J501
tab
tab
Tab
Graphic equalizer P.C.B

Ref. No
7

How to change the power IC

Procedure
1➡2➡7

1. Remove the 4 screws(❶~❹)
2. Unsolder the power IC or regulator transistor.


Front panel
Side panel
Rear panel
❶
❷
❸
❹

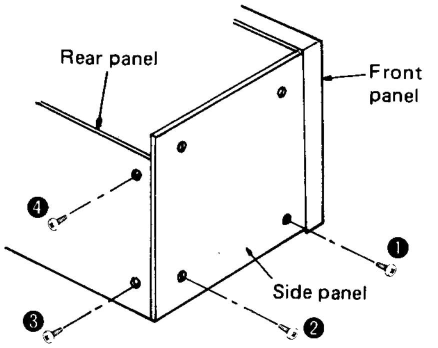
- When mounting the power amp. IC, apply silicone compound (SZZ0L15) to the rear side of power amp IC.

Ref. No
8

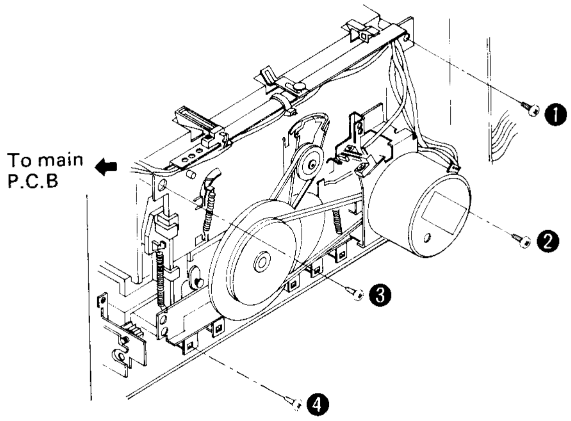
How to remove the cassette deck.

Procedure
1➡2➡7➡8

1. Remove the 4 screws (❶~❹) of side panel and rear panel.


Rear panel
Front panel
Side panel
❶
❷
❸
❹

2. Remove the 4 screws(❶~❹)of cassette deck.


To main P.C.B
❶
❷
❸
❹

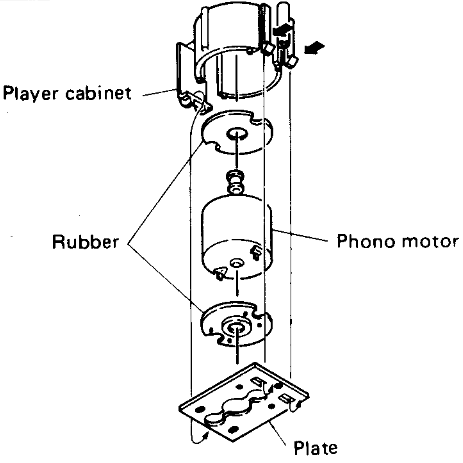
3. Remove the spoke from the record function arm. (Tape 2 only)
(Refer to Ref. No. 5 item 4 on page 5)

Ref. No
9

How to remove the phono motor

Procedure
1 ➡ 9

1. Remove the 1 screw.
2. Push the 2 claws.

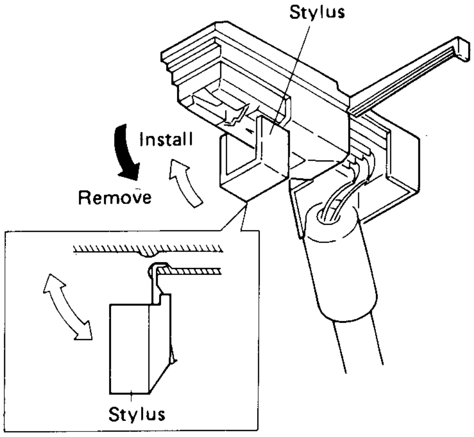

Player cabinet
Rubber
Phono motor
Plate

Ref. No
10

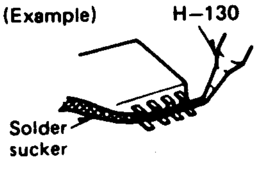
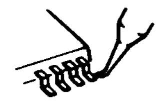
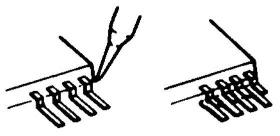
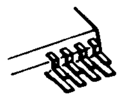
How to remove the stylus

Procedure
10

1. Remove the stylus.


Stylus
Install
Remove
Stylus

■ HOW TO REPLACE IC'S (Small outline type)

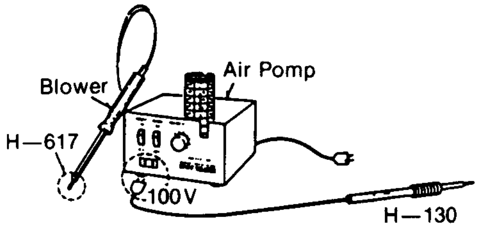
Replacing procedure			Cautions
1	Reduce the amount of solder on each pin of the integrated circuit by use of a solder sucker.		● **Recommended tool** ....Special soldering iron *H605M and H—130. *H605E and H—130. ● Do not touch the soldering iron to the area for a long time. It may otherwise cause removal of the print foil. ● When shifting the pin upward, do the job quickly while the solder is melting. If the solder is hard, it may cause removal or breakage of the print foil.
2	Melt the solder on the pin (one electrode) with the soldering iron.		
3	While the solder is melting, shift the pin upward by the soldering iron to remove it from the foil.		● When using a pencil type soldering iron. 1. Completely remove the solder from each IC pin by use of solder sucker. 2. Raise each pin by means of an eyeleteer, hold the pliers then remove IC package from P.C.B.
4	Remove each pin from the foil according to the above-mentioned procedure.		

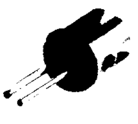
*** Special soldering iron**
(Refer to Technical Information, ORDER NO. GAD84125486T1)...For U.S.A. and Canada
(Refer to Technical Information, ORDER NO. GAD84115476T8)...For others

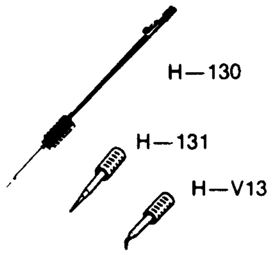
- **H–605 Spot Heater (hot-air solder iron)**

This device that uses hot air to melt solder was developed to remove Flat-Pakage ICs, RHCs and chip parts.

- H—605M (For 120V power source)
- H—605E (For 200V/220V/240V power source)







- **H–617 Twin Nozzle (for spot heater)**

Special nozzle for the removal of RHCs and chip resistors. (Nozzle diameter : 1.0 mm x 2)

- **H–130 Slim Pencil Solder Iron**

An ultrasmall ceramic heater solder iron is extremely handy for soldering chip parts, RHCs, ICs, etc., to high-density circuit boards.
Features:

- Rated power: 100V, 15W
- Max. temp.: 400°C
- Heater: ceramic (long life)
- Insulation resistance: 100MΩ
- Length: 178 mm
- Weight: 16 g (not including cord)

- **H–131, H–V13 Cap Bits**

Solder tip for the slim pencil Solder Iron and is composed of a bit holder and a corrosion resistance solder tip.
Permits changing of solder tips even while still hot.

- Solder tip: 0.3 mm

RESISTORS AND CAPACITORS

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "Ⓢ" mark is service standard parts and may differ from production parts.
4. The unit of resistance is Ω, (ohm). K = 1000Ω, M = 1000kΩ.
5. The unit of capacitance is μF. (microfarad). P = 10^{-6} μF.
6. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all area.

Numbering System of Resister

Type	Wattage	Tolerance	Value
Three Letters	One or Two Letters	Two or Three Letters	Three or Four Letters
Example E R D	2 5	T J	1 0 1

Resistor Type	Wattage	Tolerance
ERD: Carbon Film	1: 1W	F: ±1%
ERC: Solid	2: 2W	J: ±5%
ERX: Metal Film	12: 1/2W	K: ±10%
ERG: Metal Oxide Film	18: 1/8W	
ERO: High Stability Metal Film	25: 1/4W	
ERF: Flaneproof Wire-Wound Bath-Tube	50: 1/2W	
ERQ: Fuse Type Metal Film	2F: 1/4W	
RRD: Chip	S1: 1/2W	
	S2: 1/4W	

Numbering System of Capacitor

Type	Voltage	Value	Tolerance
Four Letters	One or Two Letters	Two or Five Letters	One or Two Letters
Example E C K D	1 H	3 3 3	M D

Capacitor Type	Voltage	Tolerance
ECCD: Temperature Compensating Ceramic	KC: 400V	C: ±0.25pF
ECKD: High dielectric Constant Ceramic	OJ: 6.3V	D: ±0.5pF
ECQM: Polyester	1A: 10V	F: ±1pF
ECQP: Polypropylene Film	1C: 16V	J: ±5%
ECQS: Polystylene Film	1E: 25V	K: ±10%
ECFD: Semiconductor Ceramic	1V: 35V	M: ±20%
ECEA: Electrolytic	1H: 50V	P: +100,−0%
ECEB: Electrolytic	1J: 63V	Z: +80,−20%
ECET: Electrolytic	2A: 100V	
ECSF: Tantalum	25: 25V	
ECUX: Chip	50: 50V	
ECBS: Ceramic		
ECBT: Ceramic		

● RESISTORS

Ref.No.	Part No.	Value
R61	ERD10TLJ154U	150K
R62	ERD10TLJ104U	100K
R63	ERD10TLJ274U	270K
R64	ERD10TLJ473U	47K
R65	ERD10TLJ104U	100K
R66	ERD10TLJ332U	3.3K
R67	ERD10TLJ181U	180
R68	ERD10TLJ104U	100K
R69	ERD10TLJ102U	1K
R71	ERDS2TJ561	560
R72	ERDS2TJ561	560
R73	ERDS2TJ152	1.5K
R74	ERDS2TJ472	4.7K
R201	ERDS2TJ332	3.3K
R202	ERDS2TJ824	820K
R203	ERDS2TJ332	3.3K
R204	ERDS2TJ221	220
R205	ERDS2TJ470	47
R206	ERDS2TJ333	33K
R207	ERDS2TJ824	820K
R208	ERDS2TJ221	220
R209	ERDS2TJ221	220
R210	ERDS2TJ474	470K
R211	ERDS2TJ102	1K
R212	ERDS2TJ562	5.6K
R213	ERDS2TJ224	220K
R214	ERDS2TJ222	2.2K
R215	ERDS2TJ104	100K
R216	ERDS2TJ102	1K
R217	ERDS2TJ102	1K
R218	ERDS2TJ824	820K
R219	ERDS2TJ331	330
R220	ERDS2TJ681	680
R221	ERDS2TJ122	1.2K
R222	ERDS2TJ471	470
R223	ERDS2TJ822	8.2K
R224	ERDS2TJ222	2.2K
R225	ERDS2TJ153	15K
R226 Ⓢ	ERD25FJ330	33
R227	ERDS2TJ104	100K
R228	ERDS2TJ103	10K
R229,230	ERDS2TJ273	27K
R231	ERDS2TJ153	15K
R232	ERDS2TJ334	330K
R233,234	ERDS2TJ332	3.3K
R235,236	ERDS2TJ104	100K
R237	ERDS2TJ102	1K
R239	ERDS2TJ222	2.2K
R240,241	ERDS2TJ104	100K
R242	ERDS2TJ333	33K
R243	ERDS2TJ104	100K
R244	ERDS2TJ562	5.6K
R245	ERDS2TJ153	15K
R246	ERDS2TJ473	47K
R247	ERDS2TJ103	10K
R248	ERDS2TJ102	1K
R249	ERDS2TJ681	680
R250	ERDS2TJ822	8.2K
R251	ERDS2TJ562	5.6K
R252	ERDS2TJ103	10K
R253,254	ERDS2TJ104	100K
R255	ERDS2TJ221	220
R256	ERDS2TJ104	100K
R257	ERDS2TJ332	3.3K
R258 Ⓢ	ERD25FJ2R2	2.2
R259	ERDS2TJ223	22K
R260	ERDS2TJ103	10K
R261,262	ERDS2TJ103	10K
R263,264	ERDS2TJ103	10K
R265,266	ERDS2TJ103	10K
R267	ERDS2TJ103	10K
R268	ERDS2TJ122	1.2K
R301,302	ERDS2TJ101	100
R303,304	ERDS2TJ224	220K
R305,306	ERDS2TJ470	47
R307,308	ERDS2TJ394	390K
R309,310	ERDS2TJ153	15K
R311,312	ERDS2TJ472	4.7K
R313,314	ERD25TJ221	220
R315,316	ERDS2TJ562	5.6K
R317,318	ERDS2TJ224	220K
R319	ERDS2TJ102	1K
R320	ERDS2TJ103	10K
R321,322	ERDS2TJ103	10K
R323,324	ERDS2TJ103	10K
R325,326	ERDS2TJ474	470K
R327,328	ERDS2TJ102	1K
R329,330	ERDS2TJ220	22
R331,332	ERDS2TJ123	12K
R333,334	ERDS2TJ154	150K
R335,336	ERDS2TJ123	12K
R337 Ⓢ	ERD25FJ221	220
R338	ERDS2TJ222	2.2K
R339	ERDS2TJ473	47K
R340	ERDS2TJ103	10K
R341	ERDS2TJ103	10K
R343,344	ERDS2TJ103	10K
R345,346 Ⓢ	ERD25FJ472	4.7K
R347,348	ERDS2TJ153	15K
R349	ERDS2TJ102	1K
R350	ERDS2TJ472	4.7K
R351,352 Ⓢ	ERD25FJ100	10
R353,354	ERDS2TJ101	100
R355,356	ERDS2TJ224	220K
R357,358	ERDS2TJ472	4.7K
R359,360	ERDS2TJ470	47
R361,362	ERDS2TJ394	390K
R363,364	ERDS2TJ153	15K
R365,366	ERDS2TJ562	5.6K
R367,368	ERDS2TJ224	220K
R369,370	ERDS2TJ123	12K
R371,372	ERDS2TJ103	10K
R373,374	ERDS2TJ102	1K
R375,376	ERDS2TJ222	2.2K
R377,378	ERDS2TJ103	10K
R379,380	ERDS2TJ221	220
R381,382	ERDS2TJ101	100
R383,384	ERDS2TJ122	1.2K
R385,386	ERDS2TJ222	2.2K
R387	ERDS2TJ223	22K
R388	ERDS2TJ102	1K
R389,390	ERDS2TJ473	47K
R391,392 Ⓢ	ERD25TJ563	56K
R394	ERDS2TJ472	4.7K
R396	ERDS2TJ273	27K
R397 Ⓢ	ERD25FJ100	10
R398	ERDS2TJ472	4.7K
R399	ERDS2TJ273	27K
R401 Ⓢ	ERD25FJ1R0	1
R402	ERDS2TJ331	330
R403,404	ERDS2TJ4R7	4.7
R405,406	ERDS2TJ273	27K
R408 Ⓢ	ERD25FJ100	10
R409	ERDS2TJ471	470
R410	ERDS2TJ331	330
R411	ERDS2TJ223	22K
R412	ERDS2TJ473	47K
R413	ERDS2TJ103	10K
R415	ERDS2TJ103	10K
R416	ERDS2TJ473	47K
R417	ERDS2TJ472	4.7K
R418,419	ERDS2TJ103	10K
R420	ERDS2TJ333	33K
R421	ERDS2TJ103	10K
R422	ERDS2TJ122	1.2K
R423	ERDS2TJ473	47K
R425	ERDS2TJ103	10K
R427,428	ERDS2TJ223	22K
R451,452	ERDS2TJ104	100K
R453 Ⓢ	ERD25FJ330	33
R454	ERDS2TJ472	4.7K
R455	ERDS2TJ223	22K
R456	ERDS2TJ155	1.5M
R457	ERDS2TJ471	470
R458	ERDS2TJ103	10K
R459	ERDS2TJ103	10K
R503,504	ERDS2TJ155	1.5M
R505,506	ERDS2TJ155	1.5M
R507,508	ERDS2TJ103	10K
R509,510 Ⓢ	ERD25FJ332	3.3K
R512	ERDS2TJ221	220
R520	ERDS2TJ473	47K
R521	ERDS2TJ102	1K
R522	ERDS2TJ471	470
R523	ERDS2TJ153	15K
R524	ERDS2TJ223	22K
R525	ERDS2TJ101	100
R526	ERDS2TJ273	27K
R527	ERDS2TJ102	1K
R528	ERDS2TJ562	5.6K
R529,530	ERDS2TJ333	33K
R531,532	ERDS2TJ222	2.2K
R533,534	ERDS2TJ104	100K
R535,536	ERDS2TJ153	15K
R537,538	ERDS2TJ181	180
R539,540	ERDS2TJ103	10K
R541,542	ERDS2TJ222	2.2K
R543,544	ERDS2TJ822	8.2K
R545,546	ERDS2TJ223	22K
R547,548	ERDS2TJ103	10K
R549	ERDS2TJ471	470
R551,552	ERDS2TJ331	330
R553,554	ERDS2TJ154	150K
R555,556	ERDS2TJ391	390
R557,558	ERDS2TJ682	6.8K
R559,560	ERDS2TJ124	120K
R561,562	ERDS2TJ391	390
R563,564	ERDS2TJ682	6.8K
R565	ERDS2TJ104	100K
R566	ERDS2TJ104	100K
R567,568	ERDS2TJ331	330
R569,570	ERDS2TJ682	6.8K
R571,572	ERDS2TJ104	100K
R573,574	ERDS2TJ331	330
R575,576	ERDS2TJ682	6.8K
R577,578	ERDS2TJ104	100K
R579,580	ERDS2TJ331	330
R581,582	ERDS2TJ682	6.8K
R601,602	ERDS2TJ102	1K
R603,604	ERDS2TJ473	47K
R605,606	ERDS2TJ473	47K
R607,608	ERDS2TJ331	330
R609,610	ERDS2TJ222	2.2K
R611,612	ERDS2TJ272	2.7K
R613	ERDS2TJ102	1K
R614	ERDS2TJ223	22K
R615,616 Ⓢ⚠	ERX1ANJR22	0.22
R617 Ⓢ⚠	ERD25FJ221	220
R618	ERDS2TJ102	1K
R619 Ⓢ	ERD25FJ470	47
R620	ERDS2TJ184	180K
R621,622	ERDS2TJ104	100K
R623	ERG1ANJ821	820
R624	ERDS1FJ330	33
R625,626	ERDS2TJ473	47K
R627	ERDS2TJ153	15K
R628 Ⓢ	ERD25FJ470	47
R629,630	ERDS1FJ100	10
R631,632	ERDS1FJ331	330
R633 Ⓢ	ERD25FJ331	330
R702 ⚠	ERDS1FJ332	3.3K
R703 ⚠	ERDS1FJ331	330
R704	ERDS2TJ102	1K
R706 ⚠	ERDS1FJ1R0	1
R707 ⚠	ERX12ANJR33	0.33

- CAPACITORS

Ref.No.	Part No.	Value
C60	ECEA1AU221	220
C61 Ⓢ	ECEA50MR33R	0.33
C62 Ⓢ	ECEA50ZR1	0.1
C63	ECEA1CU100	10
C64 Ⓢ	ECQM1H473JZ	0.047
C65 Ⓢ	ECQM1H472JZ	0.0047
C66	ECQV05273JC	0.027
C67	ECEA1CU100	10
C68 Ⓢ	ECQM1H562JZ	0.0056
C69,70	ECEA1CU100	10
C71	ECEA1CU3R3	3.3
C72	ECEA1CU220	22
C73	ECEA1HU010	1
C201 Ⓢ	ECCD1H560K	56P
C202 Ⓢ	ECCD1H470K	47P
C203 Ⓢ	ECCD1H100K	10P
C204 Ⓢ	ECKD1H102ZF	0.001
C205,206 Ⓢ	ECKD1H102ZF	0.001
C207 Ⓢ	ECCD1H050CC	5P
C208 Ⓢ	ECCD1H181K	180P
C209,210 Ⓢ	ECCD1H010CC	1P
C211 Ⓢ	ECCD1H100KC	10P
C212 Ⓢ	ECCD1H181K	180P
C213 Ⓢ	ECKD1H103ZF	0.01
C214	ECFD1V103KD	0.01
C215 Ⓢ	ECKD1H102ZF	0.001
C216 Ⓢ	ECCD1H060CC	6P
C217 Ⓢ	ECCD1H220KC	22P
C218 Ⓢ	ECCD1H060CC	6P
C219 Ⓢ	ECCD1H030CC	3P
C220 Ⓢ	ECKD1H102ZF	0.001
C221 Ⓢ	ECKD1H102ZF	0.001
C222	ECFD1V473KD	0.047
C223 Ⓢ	ECCD1H120KC	12P
C224	ECQP1471JZ	470P
C225,226 Ⓢ	ECKD1H103ZF	0.01
C227,228 Ⓢ	ECKD1H103ZF	0.01
C229 Ⓢ	ECCD1H080CC	8P
C230 Ⓢ	ECCD1H470K	47P
C231	ECEA0JU101	100
C232	ECEA1EU4R7	4.7
C233 Ⓢ	ECKD1H103ZF	0.01
C234	ECFD1V183KD	0.018

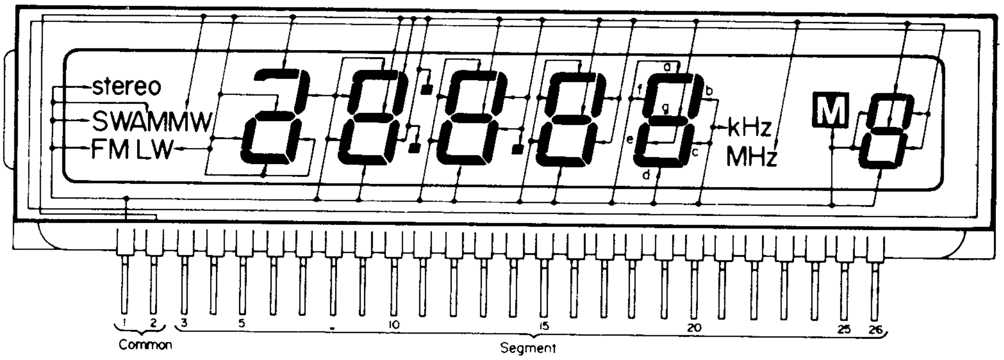
Ref.No.	Part No.	Value
C235,236 Ⓢ	ECKD1H103ZF	0.01
C237 Ⓢ	ECKD1H221KB	220P
C238	ECEA1CU100	10
C239	ECEA1HUR47	0.47
C240 Ⓢ	ECCD1H150KC	15P
C241	ECEA1HUR47	0.47
C242	ECEA1EU4R7	4.7
C243 Ⓢ	ECKD1H103ZF	0.01
C244	ECFD1V473KD	0.047
C245	ECEA1CU470	47
C246	ECEA1CU100	10
C247,248	ECFD1V183KD	0.018
C249,250	ECEA1HU010	1
C251,252	ECEA1HUR47	0.47
C253	ECQP1471JZ	470P
C254	ECEA1CU100	10
C255	ECEA0JU331	330
C256 Ⓢ	ECKD1H103ZF	0.01
C257 Ⓢ	ECKD1H103ZF	0.01
C258 Ⓢ	ECEA25M4R7R	4.7
C259	ECFD1V103KD	0.01
C260 Ⓢ	ECCD1H470K	47P
C261 Ⓢ	ECCD1H100KC	10P
C263,264 Ⓢ	ECKD1H103ZF	0.01
C265 Ⓢ	ECCD1H100KC	10P
C301,302 Ⓢ	ECKD1H681KB	680P
C303,304 Ⓢ	ECKD1H331KB	330P
C305,306	ECEA0JU101	100
C307,308	ECFR1H822KDY	0.0082
C309,310	ECEA1EU4R7	4.7
C311,312	ECEA1CU100	10
C313,314	ECFD1V123KD	0.012
C315	ECEA1CU470	47
C317,318	ECEA1HU010	1
C319,320 Ⓢ	ECKD1H102ZF	0.001
C321,322	ECEA1EU4R7	4.7
C323	ECEA1HUR47	0.47
C324 Ⓢ	ECKD1H103ZF	0.01
C325,326 Ⓢ	ECKD1H681KB	680P
C327,328 Ⓢ	ECKD1H331KB	330P
C329,330	ECEA0JU101	100
C331,332	ECFR1H822KDY	0.0082
C333,334	ECEA1HU010	1

Ref.No.	Part No.	Value
C335,336	ECFD1V123KD	0.012
C337,338	ECEA1HU010	1
C339,340	ECEA1HU010	1
C341,342	ECEA1CU470	47
C343,344 Ⓢ	ECCD1H121K	120P
C349,350	ECFD1V333KD	0.033
C351,352	ECFD1V333KD	0.033
C353,354 Ⓢ	ECEA50ZR33	0.33
C355,356 Ⓢ	ECEA50ZR33	0.33
C357	ECEA1CU471	470
C358	ECEA1CU470	47
C359	ECEA1EU4R7	4.7
C361,362 Ⓢ	ECKD1H103ZF	0.01
C402	ECEA1CU100	10
C403	ECQP1122JZ	0.0012
C404	ECQP1123JZ	0.012
C405	ECEA1CU470	47
C406 Ⓢ	ECQM1H153JZ	0.015
C407 Ⓢ	ECQM1H562JZ	0.0056
C408 Ⓢ	ECQM1H822JZ	0.0082
C409 Ⓢ	ECQM1H822JZ	0.0082
C410	ECEA1CU221	220
C451	ECEA1HU010	1
C452	ECEA1CU220	22
C453	ECEA1HU0R1	0.1
C454	ECEA1CU220	22
C455 Ⓢ	ECKD1H102ZF	0.001
C503,504	ECFD1V103KD	0.01
C505,506	ECKD1H102ZF	0.001
C507	ECEA1CU470	47
C509 Ⓢ	ECKD1H103ZF	0.01
C510	ECEA1HU2R2	2.2
C511 Ⓢ	ECKD1H102ZF	0.001
C512	ECEA1EU330	33
C513 Ⓢ	ECCD1H470K	47P
C514 Ⓢ	ECCD1H101K	100P
C515	ECEA1HU010	1
C516	ECEA1EU470	47
C517,518	ECEA1EU4R7	4.7
C519,520	ECEA1CU470	47
C521,522	ECEA1CU100	10
C523,524 Ⓢ	ECKD1H331KB	330P
C525,526 Ⓢ	ECCD1H101K	100P

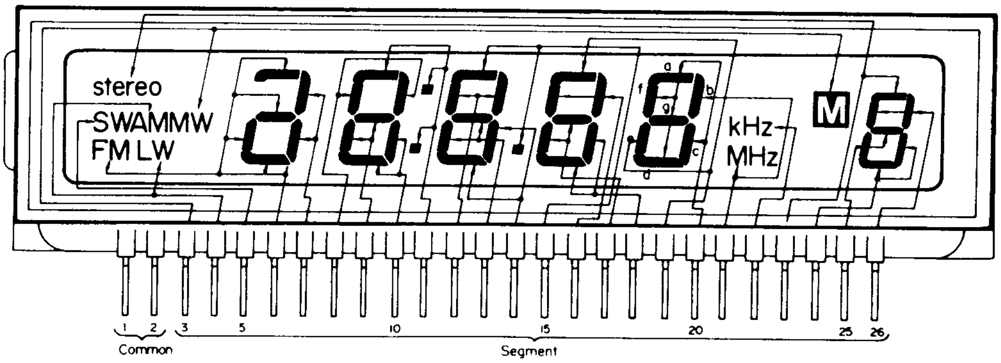
Ref.No.	Part No.	Value
C527,528	ECEA1CU100	10
C529	ECEA1AU101	100
C531,532	ECFD1V473KD	0.047
C533,534	ECEA1HU010	1
C535,536	ECFD1V153KD	0.015
C537,538	ECEA1HUR33	0.33
C539,540 Ⓢ	ECKD1H682KB	0.0068
C541,542	ECEA1HU0R1	0.1
C543,544 Ⓢ	ECKD1H152KB	0.0015
C545,546	ECFD1V473KD	0.047
C547,548 Ⓢ	ECKD1H471KB	470P
C549,550	ECFR1V153KDY	0.015
C561,562 Ⓢ	ECKD1H331KB	330P
C601,602 Ⓢ	ECKD1H331KB	330P
C603,604	ECEA1HU2R2	2.2
C605,606 Ⓢ	ECCD1H101K	100P
C607,608 Ⓢ	ECCD1H050CC	5P
C609,610	ECEA1HU330	33
C611,612	ECEA1HU100	10
C613,614	ECEA1VU470	47
C615	ECEA1VU470	47
C616	ECEA1EU330	33
C617	ECEA1EU330	33
C618	ECEA1CU100	10
C619,620	ECFD1E104MD	0.1
C621,622 Ⓢ	ECCD1H101K	100P
C633 Ⓢ	ECCD1H101K	100P
C701 ⚠	ECKDKC103PF2	0.01
C702 ⚠	ECKD2H103PE	0.01
C706 Ⓢ	ECKD1H103ZF	0.01
C707,708 Ⓢ	ECKD1H103ZF	0.01
C709	ECKD1H103ZF	0.01
C710 ⚠	ECEA1VU332	3300
C711 ⚠	ECEA1VU332	3300
C712	ECEA1EU222	2200
C713,714	ECEA1CU101	100
C715	ECEA1CU471	470

■ LIQUID CRISTAL DISPLAY (LCD)

- **Common terminal (No. 1, 2)**



- **Segment terminal (No. 3 ~ 26)**



MEASUREMENTS AND ADJUSTMENTS

AM/FM

Control positions and equipment used

- AM and FM signal generator (AM and FM-SG).
- Stereo modulator
- Distortion analyser
- Oscilloscope
- Oscillator
- AC and DC electronic voltmeter (EVM)
- Frequency counter
- Choke coil (100μH)
- Resistor (100kΩ)
- Ceramic capacitor (200pF)
- Test tape OZZCWAT OZZCFM

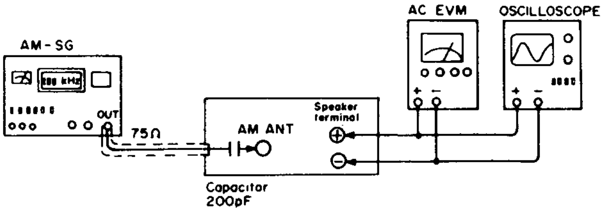
Note: For **T201**(AM-IFT), and **L204** (AM OSC coil), adjusted parts are supplied.
So, do not turn the cores of these parts.

AM-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**AM**" position.
3. Place the radio frequency display and signal generator setting to **612kHz.**
4. Adjust **L203** for maximum output.
5. Place the radio frequency display and signal generator setting to **1503kHz.**
6. Adjust **CT202** for maximum output.
7. Repeat steps 3 ~ 8.

Note: Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation 30%
Modulation frequency......... 400 Hz

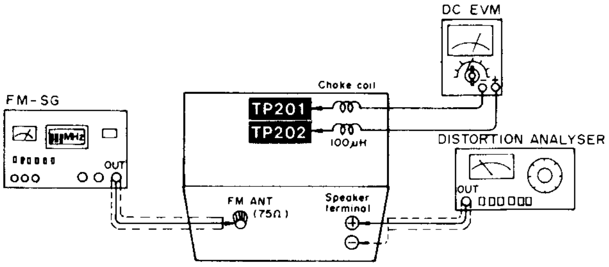

AC EVM
OSCILLOSCOPE
AM-SG
OUT
75Ω
AM ANT
Speaker terminal
Capacitor 200pF

FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" position.
3. Place the radio frequency display and signal generator setting to **100.10 MHz**.
4. Adjust **T203** core so that voltage measured in signal mode is **0 mV (0 ± 30 mV)** in 300 mV range.
5. Adjust **T204** so that the distortion factor of L ch is minimized.
6. Repeat steps 4 and 5 a few times.
7. Make sure that the distortion factors of L ch and R ch are nearly the same with each other.

Note: The adjusting screwdriver used should be made of resin.

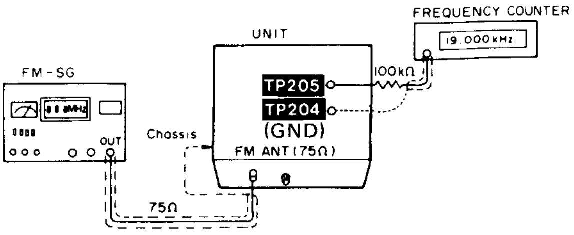
FM SIGNAL GENERATOR CONDITION
Modulation............................100%
Modulation frequency..........400 Hz
Output level.......................... 66 dB


DC EVM
FM-SG
OUT
Choke coil
TP201
TP202
100μH
DISTORTION ANALYSER
OUT
FM ANT (75Ω)
Speaker terminal

FM STEREO ADJUSTMENT (FREE RUN)

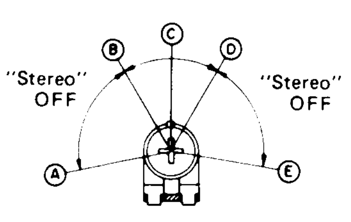
1. Test equipment connection is shown in figure.
2. Set the unit into "**FM auto**" position. (by FM mode select button).
3. Place the radio frequency display and signal generator settint to **100.10 MHz.**
4. Adjust **VR201** for **19 kHz ± 30 Hz** on frequency counter reading.

FM SIGNAL GENERATOR CONDITION
Modulation 0
Modulation frequency.......... 0
Output level......................... 66 dB


FREQUENCY COUNTER
19 000kHz
UNIT
FM-SG
100kΩ
TP205
TP204
(GND)
Chassis
FM ANT (75Ω)
OUT
75Ω

USING ALTERNATE SYSTEM

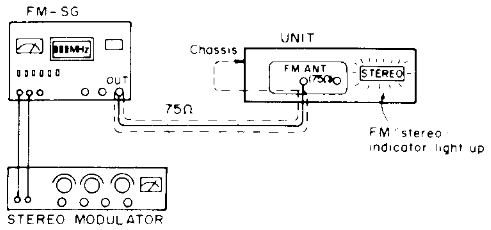
1. Apply stereo signal from generator or receive the stereo broadcast.
2. Adjust **VR201** until stereo indicator light up. Cement arm of **VR201** as shown figure.


"Stereo" OFF
"Stereo" OFF
Ⓐ
Ⓑ
Ⓒ
Ⓓ
Ⓔ

VR201

Ⓐ – Ⓑ, Ⓓ – Ⓔ.... "Stereo" OFF position
Ⓑ – Ⓓ............ "Stereo" ON position (Indicator lighting)
Ⓒ................ Adjust point of pilot circuit

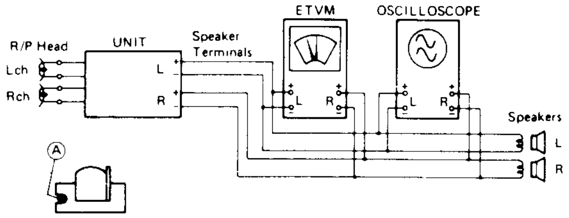
FM SIGNAL GENERATOR CONDITION
Modulation.......................... 10%
Modulation frequency......... Pilot (19 kHz)
Output level........................ 66 dB


FM-SG
OUT
Chassis
UNIT
FM ANT (75Ω)
STEREO
75Ω
FM stereo indicator light up
STEREO MODULATOR

Pilot signal to ON ····· 19kHz
Output mode ········· L+R

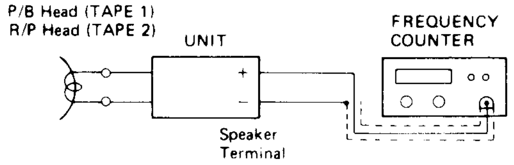
HEAD AZIMUTH ADJUSTMENT (Tape1/Tape2)

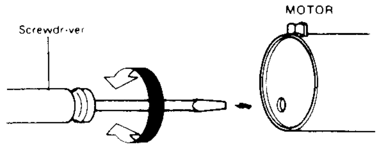
1. Test equipment connection is shown in figure.
2. Playback test tape **QZZCFM** (8kHz).
3. Adjust screw **A** for maximum indication for equal output on both channels.
4. After adjustment, lock the head adjust screw **A** with lacguer.


R/P Head
Lch
Rch
UNIT
L
R
Speaker Terminals
ETVM
L
R
OSCILLOSCOPE
L
R
Speakers
L
R
Ⓐ

TAPE MOTOR SPEED ADJUSTMENT (Tape1/Tape2)

1. Test equipment connection is shown in figure.
2. Playback test tape **QZZCWAT** (3kHz).
3. Adjust the VR at the rear of the motor (Refer Fig.1) for **2970Hz**(2920~3000Hz)with the Tape 1.
4. Adjust the VR at the rear of the motor (Refer Fig.1) for **2950 Hz**(2920~3000Hz) with the Tape 2.


P/B Head (TAPE 1)
R/P Head (TAPE 2)
UNIT
+
−
Speaker Terminal
FREQUENCY COUNTER

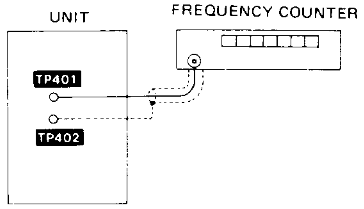

MOTOR
Screwdriver

(Fig. 1)

Note: Adjust the Tape1 motor for −10 ~ +30Hz higher than Tape2.

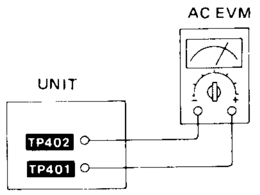
BIAS OSCILLATION ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure.
2. Place unit into **TAPE** position.
3. Place cassette deck into **REC** mode and select, beat proof switch to **B** position.
4. Adjust **L401** for **85kHz±3kHz** on frequency counter reading.


UNIT
FREQUENCY COUNTER
TP401
TP402

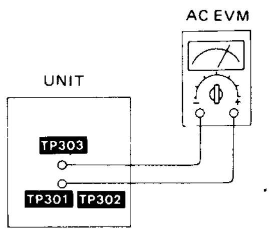
ERASE CURRENT ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure.
2. Place unit into **TAPE** position.
3. Place cassette deck into **REC** mode and tape selector into **Metal** tape mode
4. Adjust **VR403** for **155±5mV** on AC electronic voltmeter (AC EVM)


AC EVM
UNIT
TP402
TP401

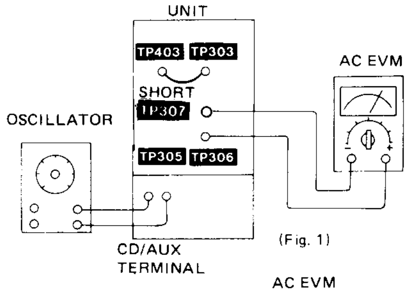
RECORDING BIAS ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure.
2. place unit into **TAPE** position.
3. Place cassette deck into **REC** mode and tape selector into **Normal** tape mode.
4. Adjust **VR401** (Lch) and **VR402** (Rch) for **4.4±0.1mV**on AC electronic voltmeter (AC EVM)

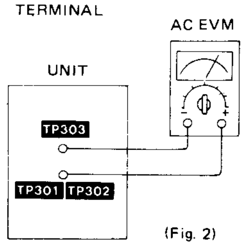

AC EVM
UNIT
TP303
TP301
TP302

RECORDING CURRENT ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure. (Fig.1)
2. Place unit into **CD/AUX** position and cassette deck into **STOP** mode.
3. Short-circuit the test points **TP403** and **TP303**.
4. Place cassette deck into **REC** mode.
5. Supply AF cscillator signal (1 kHz) into CD/AUX position and adjust the input level to get **410+10mV** on AC electronic voltmeter (AC EVM).
6. Test equipment connection is shown in figure.(Fig.2)
7. Place cassette deck into **REC** mode and tape selector into **Normal** tape mode.
8. Adjust **VR305** (Lch) and **VR306** (Rch) for **0.42±0.01mV** on AC electronic voltmeter (AC EVM).


UNIT
TP403
TP303
SHORT
TP307
TP305
TP306
OSCILLATOR
AC EVM
CD/AUX TERMINAL

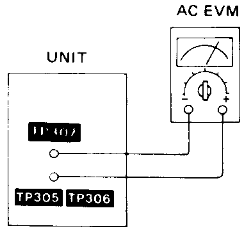
(Fig. 1)


AC EVM
UNIT
TP303
TP301
TP302

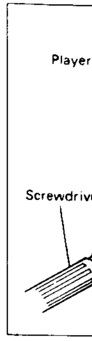
(Fig. 2)

PLAYBACK GAIN ADJUSTMENT (Tape1/Tape2)

1. Test equipment connection is shown in figure.
2. Playback test tape **QZZCFM** (315kHz).
3. Adjust **VR301, 302** (tape1) and **VR303, 304** (tape2) for **410±10mV** on AC electronic voltmeter (AC EVM).


AC EVM
UNIT
TP307
TP305
TP306

• PHONO


Player
Screwdriv

• TUN

F

• CASS

FRC

ition
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ot circuit

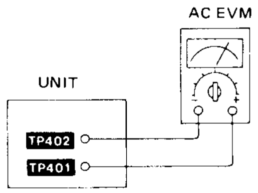
Speakers L R

ENCY
ER

ER

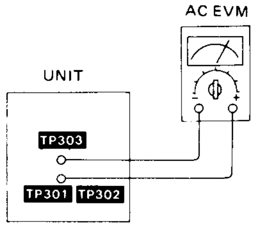
ERASE CURRENT ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure.
2. Place unit into **TAPE** position.
3. Place cassette deck into **REC** mode and tape selector into **Metal** tape mode
4. Adjust **VR403** for **155±5mV** on AC electronic voltmeter (AC EVM)


AC EVM
UNIT
TP402
TP401

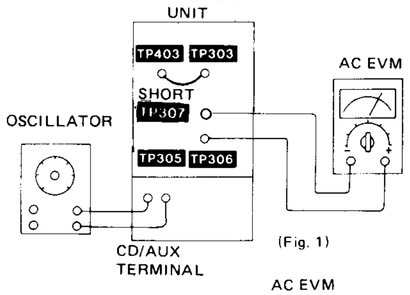
RECORDING BIAS ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure.
2. place unit into **TAPE** position.
3. Place cassette deck into **REC** mode and tape selector into **Normal** tape mode.
4. Adjust **VR401** (Lch) and **VR402** (Rch) for **4.4±0.1mV**on AC electronic voltmeter (AC EVM)

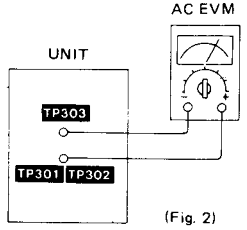

AC EVM
UNIT
TP303
TP301 TP302

RECORDING CURRENT ADJUSTMENT (Tape2)

1. Test equipment connection is shown in figure. (Fig.1)
2. Place unit into **CD/AUX** position and cassette deck into **STOP** mode.
3. Short-circuit the test points **TP403** and **TP303**.
4. Place cassette deck into **REC** mode.
5. Supply AF cscillator signal (1 kHz) into CD/AUX position and adjust the input level to get **410+10mV** on AC electronic voltmeter (AC EVM).
6. Test equipment connection is shown in figure.(Fig.2)
7. Place cassette deck into **REC** mode and tape selector into **Normal** tape mode.
8. Adjust **VR305** (Lch) and **VR306** (Rch) for **0.42±0.01mV** on AC electronic voltmeter (AC EVM).


UNIT
TP403 TP303
SHORT
TP307
TP305 TP306
AC EVM
OSCILLATOR
CD/AUX
TERMINAL

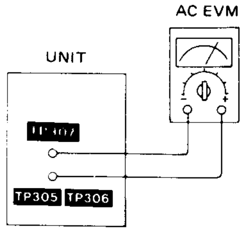
(Fig. 1)


AC EVM
UNIT
TP303
TP301 TP302

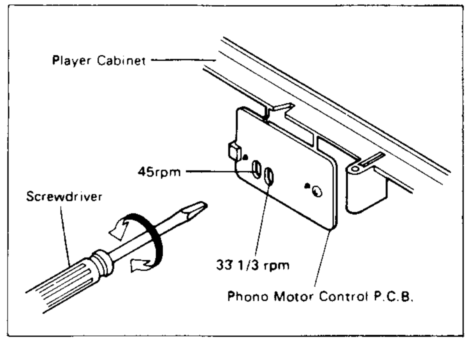
(Fig. 2)

PLAYBACK GAIN ADJUSTMENT (Tape1/Tape2)

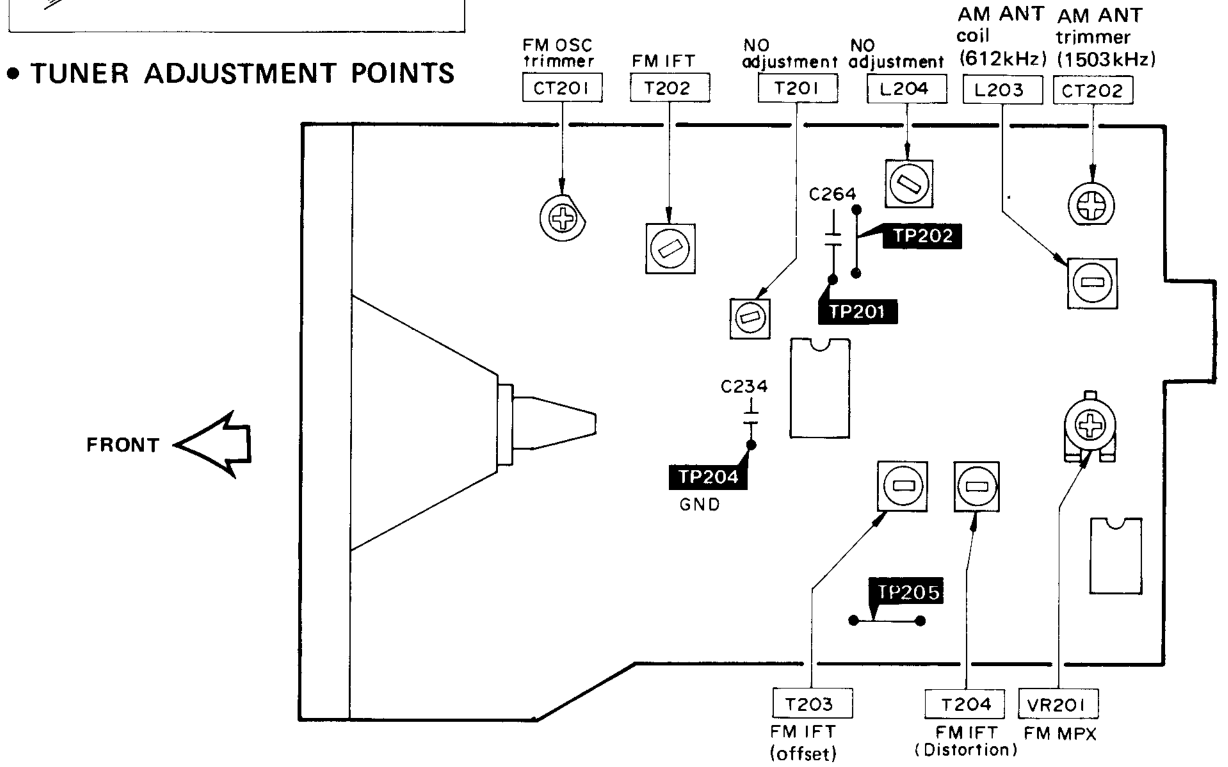
1. Test equipment connection is shown in figure.
2. Playback test tape **QZZCFM** (315kHz).
3. Adjust **VR301, 302** (tape1) and **VR303, 304** (tape2) for **410±10mV** on AC electronic voltmeter (AC EVM).


AC EVM
UNIT
TP307
TP305 TP306

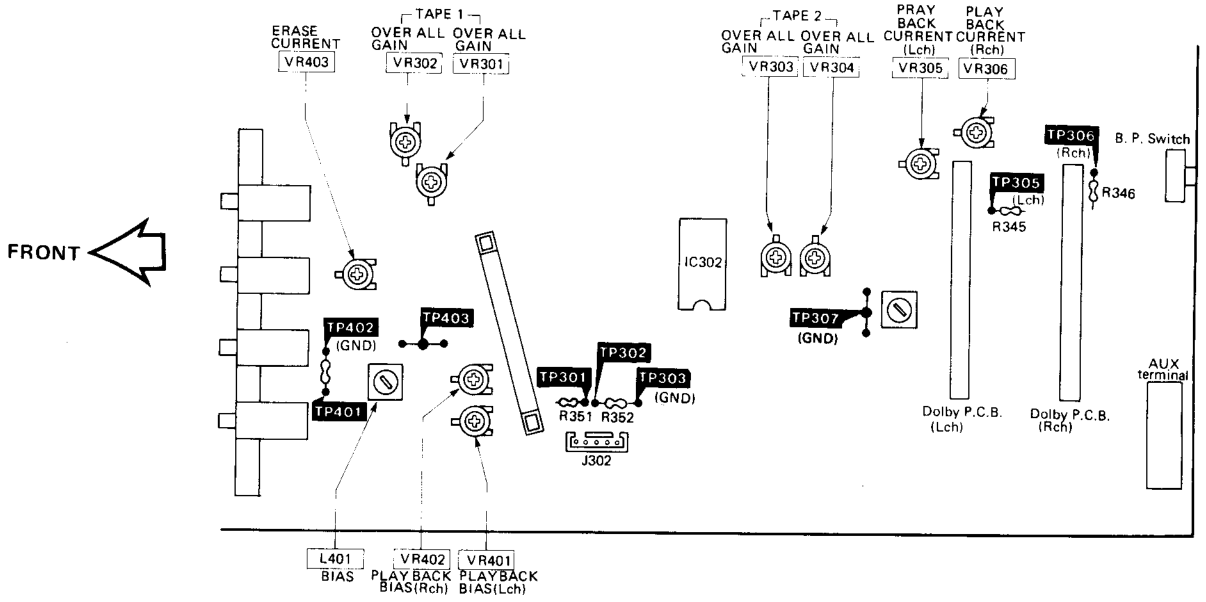
•PHONO MOTOR SPEED ADJUSTMENT


Player Cabinet
45rpm
Screwdriver
33 1/3 rpm
Phono Motor Control P.C.B.

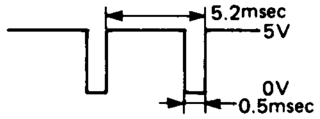
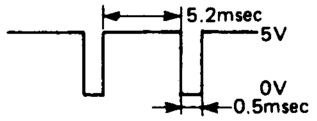
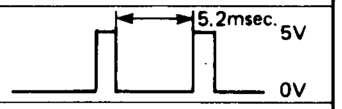
• TUNER ADJUSTMENT POINTS


FM OSC trimmer
CT201
FM IFT
T202
NO adjustment
T201
NO adjustment
L204
AM ANT coil (612kHz)
L203
AM ANT trimmer (1503kHz)
CT202
C264
TP202
TP201
C234
TP204
GND
FRONT
TP205
T203
FM IFT (offset)
T204
FM IFT (Distortion)
VR201
FM MPX

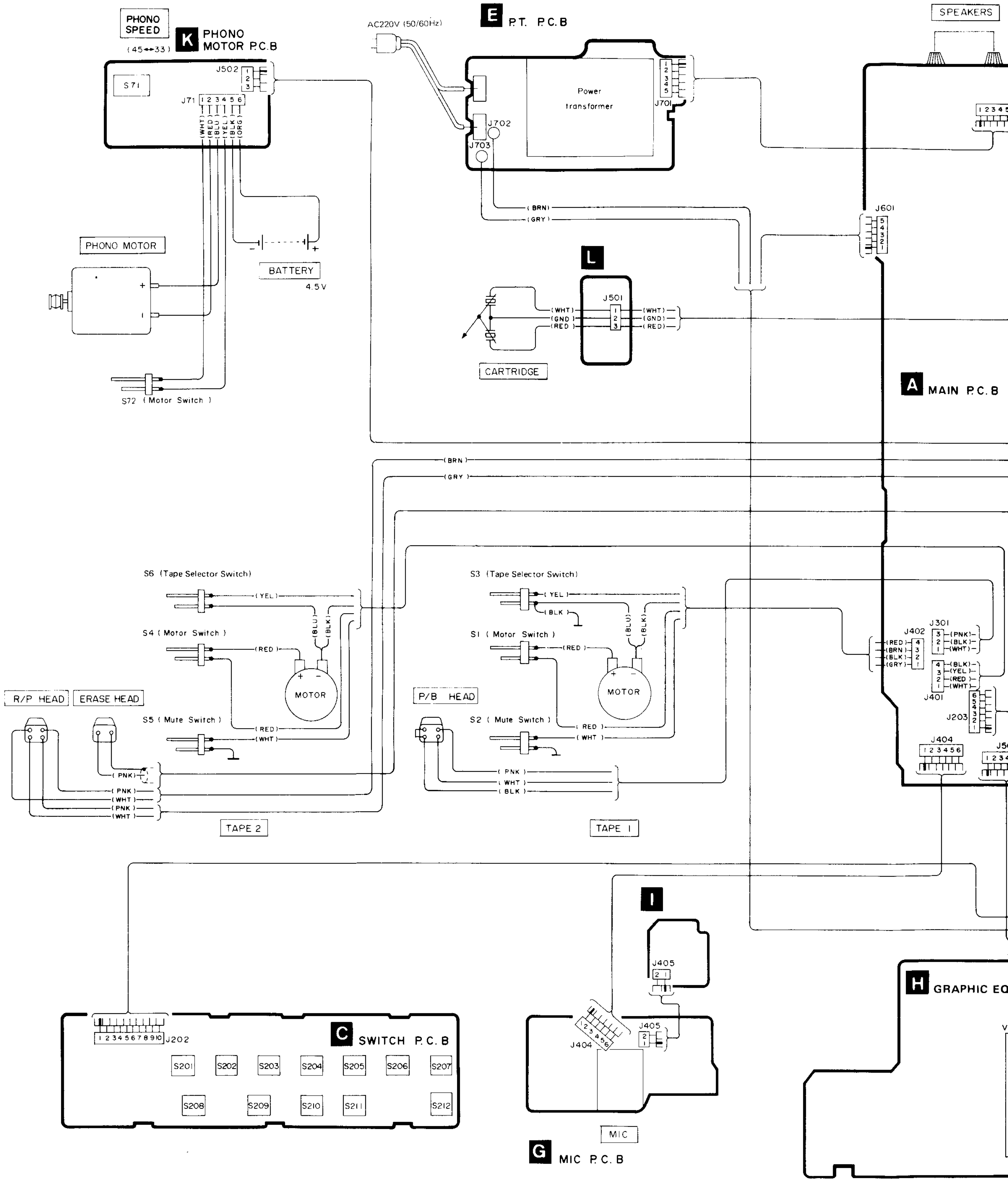
• CASSETTE DECK ADJUSTMENT POINTS


ERASE CURRENT
VR403
TAPE 1
OVER ALL GAIN
VR302
OVER ALL GAIN
VR301
TAPE 2
OVER ALL GAIN
VR303
OVER ALL GAIN
VR304
PRAY BACK CURRENT (Lch)
VR305
PLAY BACK CURRENT (Rch)
VR306
TP306 (Rch)
B. P. Switch
TP305 (Lch)
R346
R345
FRONT
IC302
TP307 (GND)
TP402 (GND)
TP403
TP401
TP301
TP302
TP303 (GND)
R351 R352
J302
Dolby P.C.B. (Lch)
Dolby P.C.B. (Rch)
AUX terminal
L401
BIAS
VR402
PLAY BACK BIAS(Rch)
VR401
PLAYBACK BIAS(Lch)

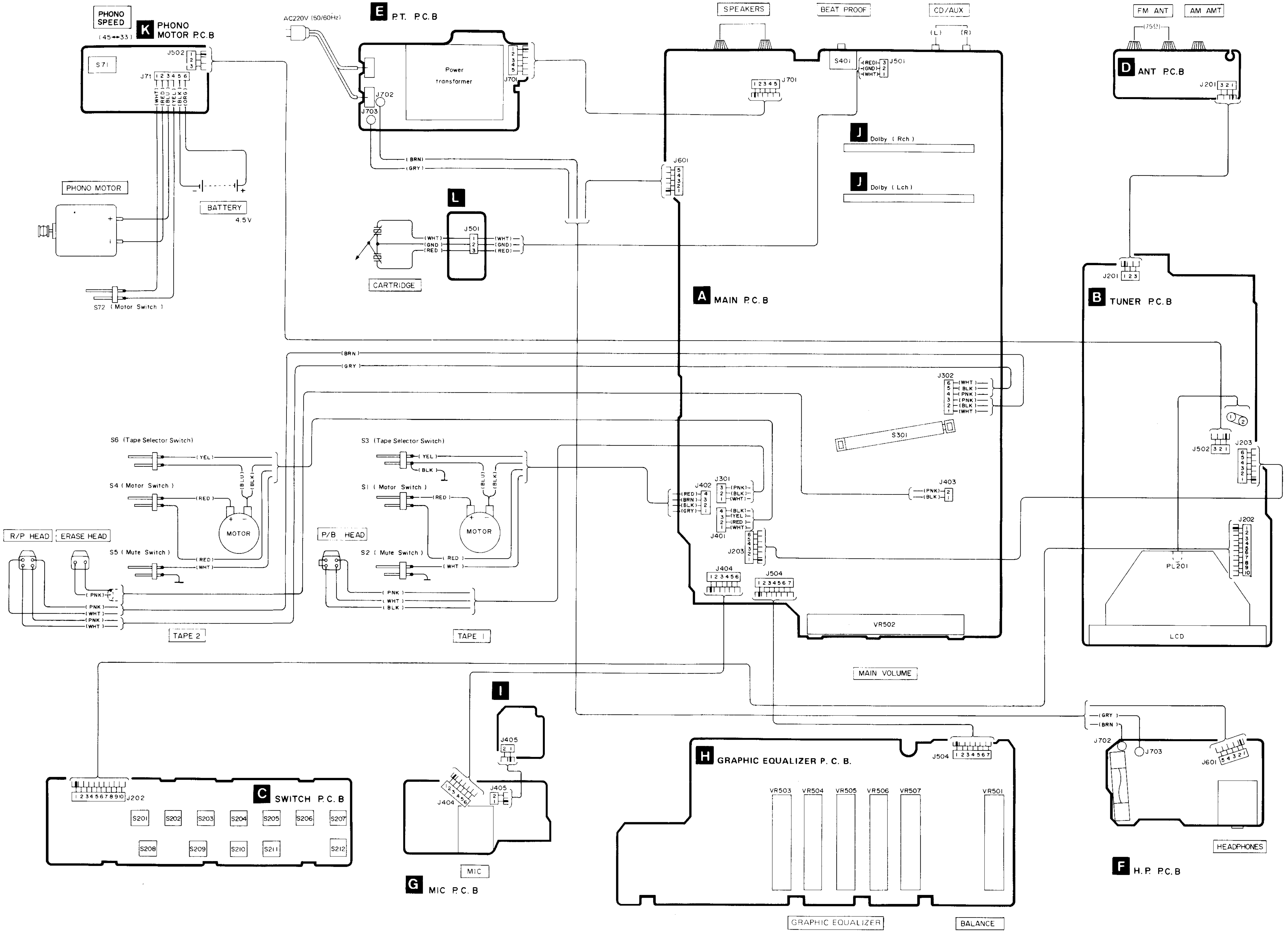
FUNCTION OF TERMINAL (PLL CONTROLLER IC 203)

Pin No.	Mark	Description of terminal
1 ~ 4 34 ~ 52	LCD4 ~ LCD1 LCD23 ~ LCD5	Segment signal output terminal for display.
5	COM2	Common signal output terminal connected to LCD. Output is delivered in 3 values of earth, 1/2VDD and VDD (at 5 ms intervals) in a period of 50 Hz. The segment turns ON when the difference in voltage is ± VDD between these terminals and LCD1 ~ LCD23.
6	COM1	
8	FM	Input is local oscillation output (VCO) in a range of 10 ~ 130 MHz (0.3Vp-p, min.). There are 1/2 fixed frequency division prescaler and 2-step (1/32, 1/33) prescaler internally. Therefore, when deciding the frequency dividing value of programmable divider, it must be decided from the frequency obtained by halving the local oscillation output (VCO).
9	AM	Input is local oscillation output (VCO) in a range of 0.5 ~ 20 MHz (0.1Vp-p, min.). When the mode is shifted to FM, the AM terminal voltage automatically becomes the supply voltage of device.
10	GND	Ground terminal.
11	E01	When the divided oscillation frequency is higher than the standard frequency, H-level output is delivered from these terminals. When it is lower, L-level (0V) output is delivered. When they coincide, it results in floating.
12	E02	
13	CE	Device selection signal input terminal. The signal level should be high when the device is operated, and low when not operated. With this terminal shifted to low level, LCD (liquid crystal display) turns off and the memory is held.
14	NC	Not used in this unit.
15	X1	Connecting terminal for crystal oscillator. The crystal connected is at 4.5 MHz.
16	X2	
17	A3 (SD)	Terminal to put in stop signal during auto tuning. The voltage is 5V with broadcast received, and 0V without broadcast received.
18	A2	Not used in this unit.
19	A1	FM/AM output terminal. (FM ──► 5V, AM ──► 0V)
20	A0	Auto/mono changeover output terminal. (auto ──► 0V, mono ──► 5V)
21 ~ 24	K3 ~ K0	Input terminal for key return signal from external key matrix. 
25 ~ 28	B3 ~ B0	Input terminal for key return signal from external key matrix. 
29	C3	Output terminal for key return signal to let the stereo indicator light up. 
30	C2	AF output signal detection terminal. When AF output is higher than AC 2V, Q904 turns ON and key return signal is put into No. 24 pin.
31	C1	FM/AM output terminal (FM ─► 0V, AM ─► 0V).
32	C0	Muting signal output terminal. Muting signal is put out during operation of FM/AM selector switch and tuning switch. (4V during muting)
33	VDD	Power supply terminal of device. Voltage of 5V ± 10% is supplied during operation of device. To hold the internal data memory (RAM), the voltage can be decreased to 2.5V. **Note:** Pins 7 and 33 are connected inside the chip. So, it is unnecessary to supply voltage to the pins.

WIRING CONNECTION DIAGRAM

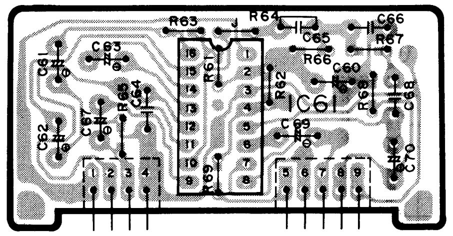

PHONO SPEED
(45↔33)
K PHONO MOTOR P.C.B
S71
J502
J71
(WHT) (RED) (BLU) (YEL) (BLK) (ORG)
PHONO MOTOR
BATTERY
4.5V
S72 (Motor Switch)
AC220V (50/60Hz)
E P.T. P.C.B
Power transformer
J701
J702
J703
(BRN)
(GRY)
SPEAKERS
J601
L
J501
(WHT)
(GND)
(RED)
CARTRIDGE
A MAIN P.C.B
S6 (Tape Selector Switch)
(YEL)
(BLU)
(BLK)
S4 (Motor Switch)
(RED)
MOTOR
S5 (Mute Switch)
(WHT)
R/P HEAD
ERASE HEAD
(PNK)
TAPE 2
S3 (Tape Selector Switch)
S1 (Motor Switch)
S2 (Mute Switch)
P/B HEAD
TAPE 1
J402
J301
J401
J203
J404
J202
C SWITCH P.C.B
S201
S202
S203
S204
S205
S206
S207
S208
S209
S210
S211
S212
I
J405
J404
MIC
G MIC P.C.B
H GRAPHIC EQ

WIRING CONNECTION DIAGRAM

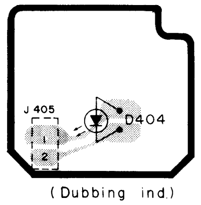

PHONO SPEED
(45↔33)
K PHONO MOTOR P.C.B
S71
J502
J71
(WHT) (RED) (BLU) (YEL) (BLK) (ORG)
PHONO MOTOR
BATTERY
4.5V
S72 (Motor Switch)
AC220V (50/60Hz)
E P.T. P.C.B
Power transformer
J701
J702
J703
(BRN)
(GRY)
L
J501
(WHT) (GND) (RED)
CARTRIDGE
SPEAKERS
BEAT PROOF
CD/AUX
(L) (R)
S401
J501
J701
J601
J Dolby (Rch)
J Dolby (Lch)
A MAIN P.C.B
FM ANT
AM AMT
(75Ω)
D ANT P.C.B
J201
B TUNER P.C.B
J302
(WHT) (BLK) (PNK) (PNK) (BLK) (WHT)
S301
J403
(PNK) (BLK)
J502
J203
J202
PL201
LCD
S6 (Tape Selector Switch)
S4 (Motor Switch)
S5 (Mute Switch)
S3 (Tape Selector Switch)
S1 (Motor Switch)
S2 (Mute Switch)
(YEL) (BLK) (BLU) (RED) (WHT) (PNK)
MOTOR
R/P HEAD
ERASE HEAD
P/B HEAD
TAPE 2
TAPE 1
J402
(RED) (BRN) (BLK) (GRY)
J301
(PNK) (BLK) (WHT)
J401
(BLK) (YEL) (RED) (WHT)
J203
J404
J504
VR502
MAIN VOLUME
I
J405
J404
G MIC P.C.B
MIC
C SWITCH P.C.B
J202
S201 S202 S203 S204 S205 S206 S207
S208 S209 S210 S211 S212
H GRAPHIC EQUALIZER P. C. B.
J504
VR503 VR504 VR505 VR506 VR507 VR501
GRAPHIC EQUALIZER
BALANCE
(GRY) (BRN)
J702
J703
J601
HEADPHONES
F H.P. P.C.B

■ PRINTED CIRCUIT BOARDS

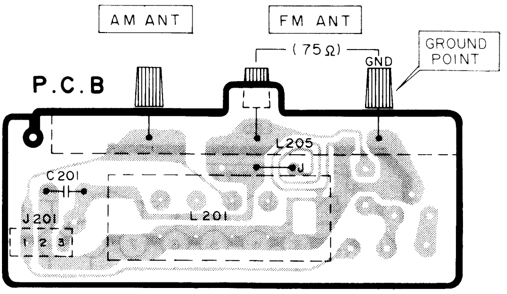
J DOLBY P.C.B



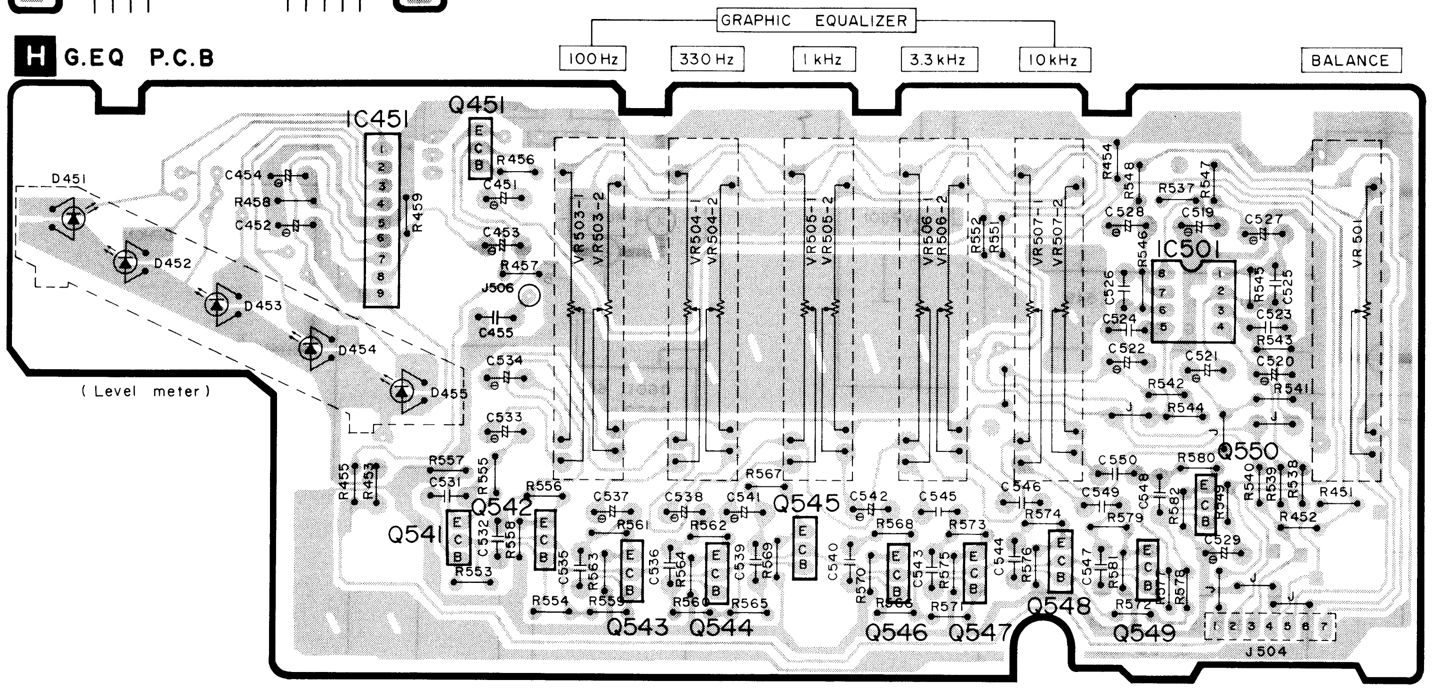
I


J405
D404
(Dubbing ind.)

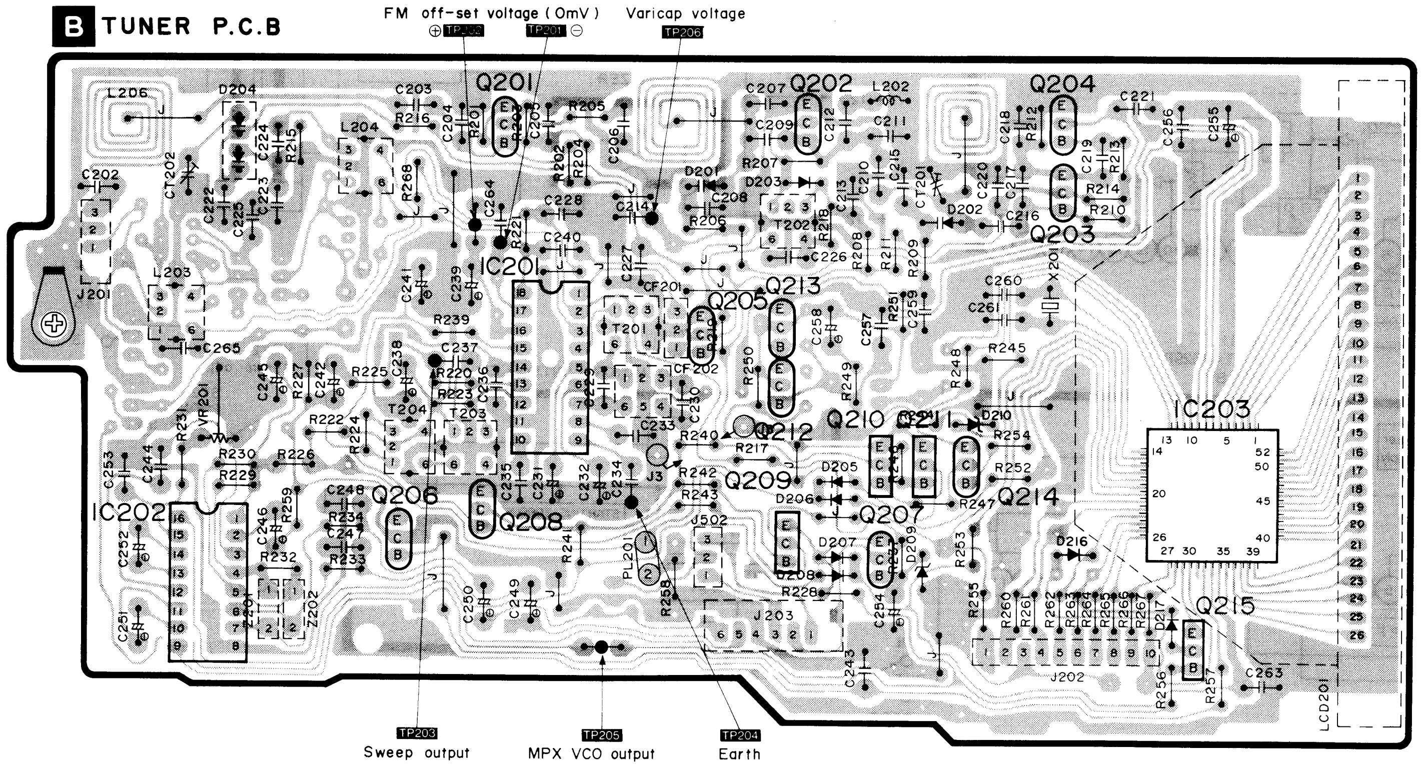
D ANT P.C.B


AM ANT
FM ANT
(75Ω)
GND
GROUND POINT
L205
C201
J201
L201

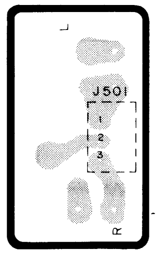
H G.EQ P.C.B


GRAPHIC EQUALIZER
100Hz
330Hz
1kHz
3.3kHz
10kHz
BALANCE
IC451
Q451
IC501
D451
D452
D453
D454
D455
(Level meter)
VR503-1
VR503-2
VR504-1
VR504-2
VR505-1
VR505-2
VR506-1
VR506-2
VR507-1
VR507-2
VR501
Q541
Q542
Q543
Q544
Q545
Q546
Q547
Q548
Q549
Q550
J504

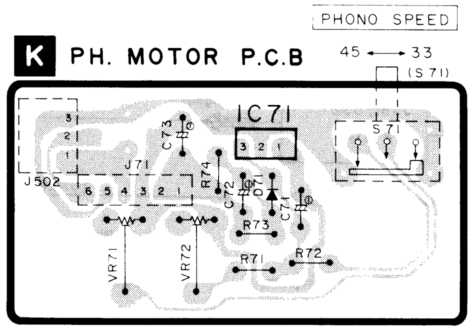
B TUNER P.C.B


FM off-set voltage (OmV)
⊕ TP202
TP201 ⊖
Varicap voltage
TP206
IC201
IC202
IC203
Q201
Q202
Q203
Q204
Q205
Q206
Q207
Q208
Q209
Q210
Q211
Q212
Q213
Q214
Q215
J201
J202
J203
LCD201
TP203
Sweep output
TP205
MPX VCO output
TP204
Earth

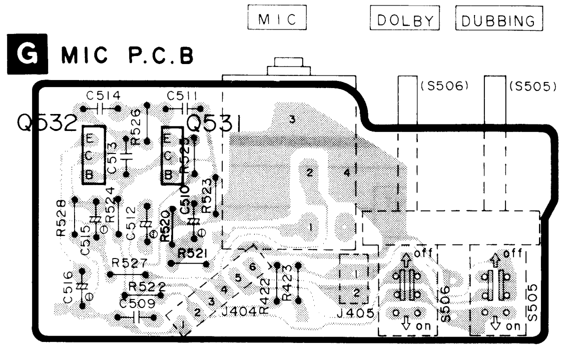
L



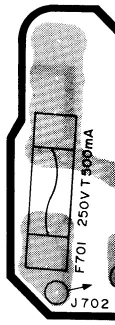
K PH. MOTOR P.C.B


PHONO SPEED
45 ←→ 33
(S71)
IC71
J502
J71

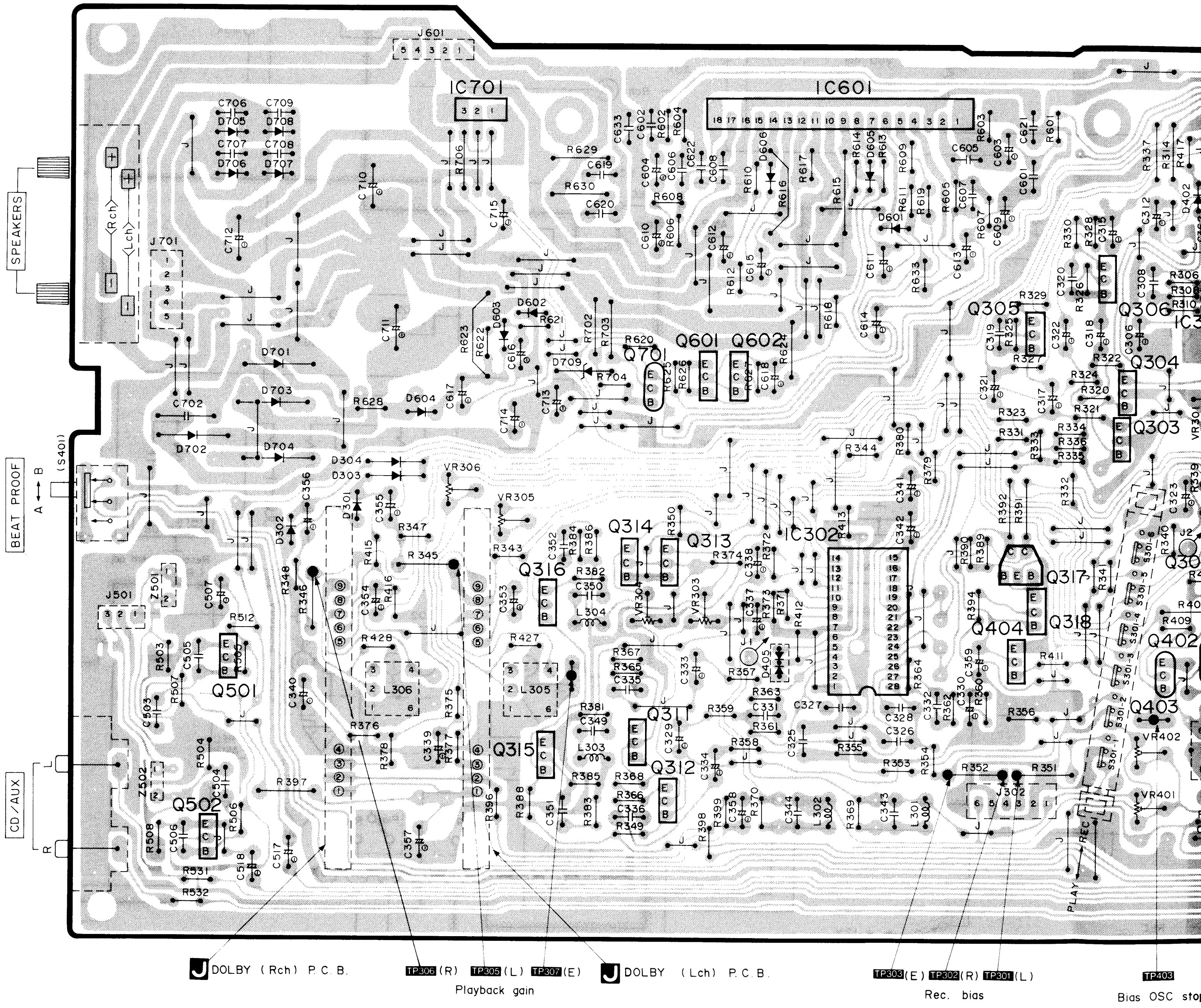
G MIC P.C.B

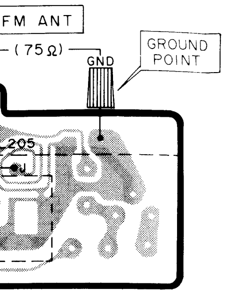

MIC
DOLBY
DUBBING
(S506)
(S505)
Q532
Q531
J404
J405
S506
S505
off
on

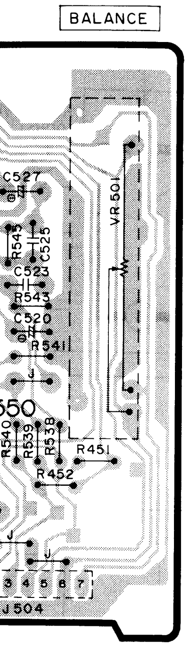
F H.P

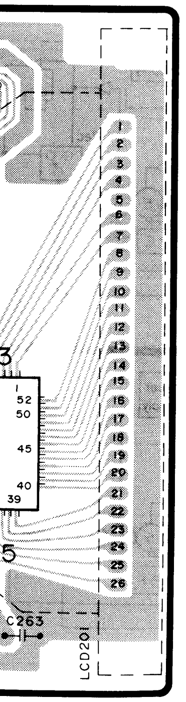

F701 250V T500mA
J702

A MAIN P.C.B

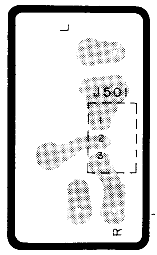

SPEAKERS
(Rch)
(Lch)
BEAT PROOF
(S401)
A ←→ B
CD/AUX
L
R
J601
J701
J501
IC701
IC601
IC302
Q501
Q502
Q601
Q602
Q701
Q303
Q304
Q305
Q306
Q311
Q312
Q313
Q314
Q315
Q316
Q317
Q318
Q402
Q403
Q404
J302
PLAY
REC
J DOLBY (Rch) P.C.B.
TP306 (R) TP305 (L) TP307 (E)
Playback gain
J DOLBY (Lch) P.C.B
TP303 (E) TP302 (R) TP301 (L)
Rec. bias
TP403
Bias OSC stop


FM ANT
(75Ω)
GND
GROUND POINT

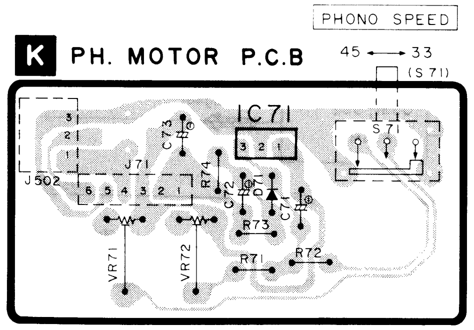

BALANCE
VR501
C527
C525
C523
R543
C520
R541
R540
R539
R538
R451
R452
J504


LCD201
C263

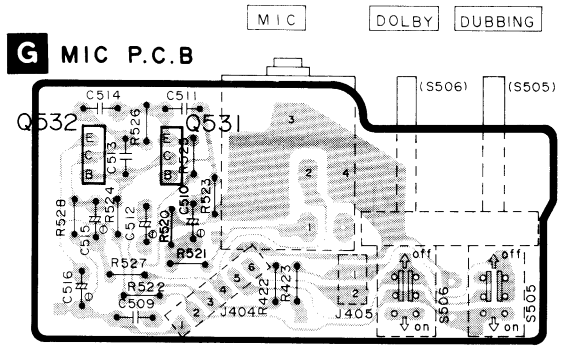
L



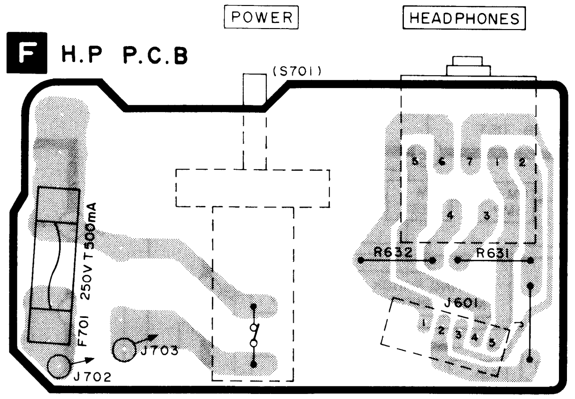
K PH. MOTOR P.C.B


PHONO SPEED
45 ⟷ 33
(S71)
IC71
J71
J502
C73
C72
C71
D71
R74
R73
R72
R71
VR71
VR72

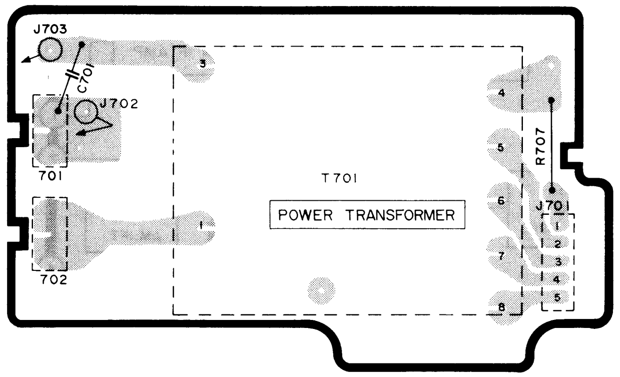
G MIC P.C.B


MIC
DOLBY
DUBBING
(S506)
(S505)
Q532
Q531
C514
C511
C513
C515
C512
C516
C509
C510
R528
R526
R524
R527
R522
R521
R523
R520
R422
R421
J404
J405
S506
S505
off
on

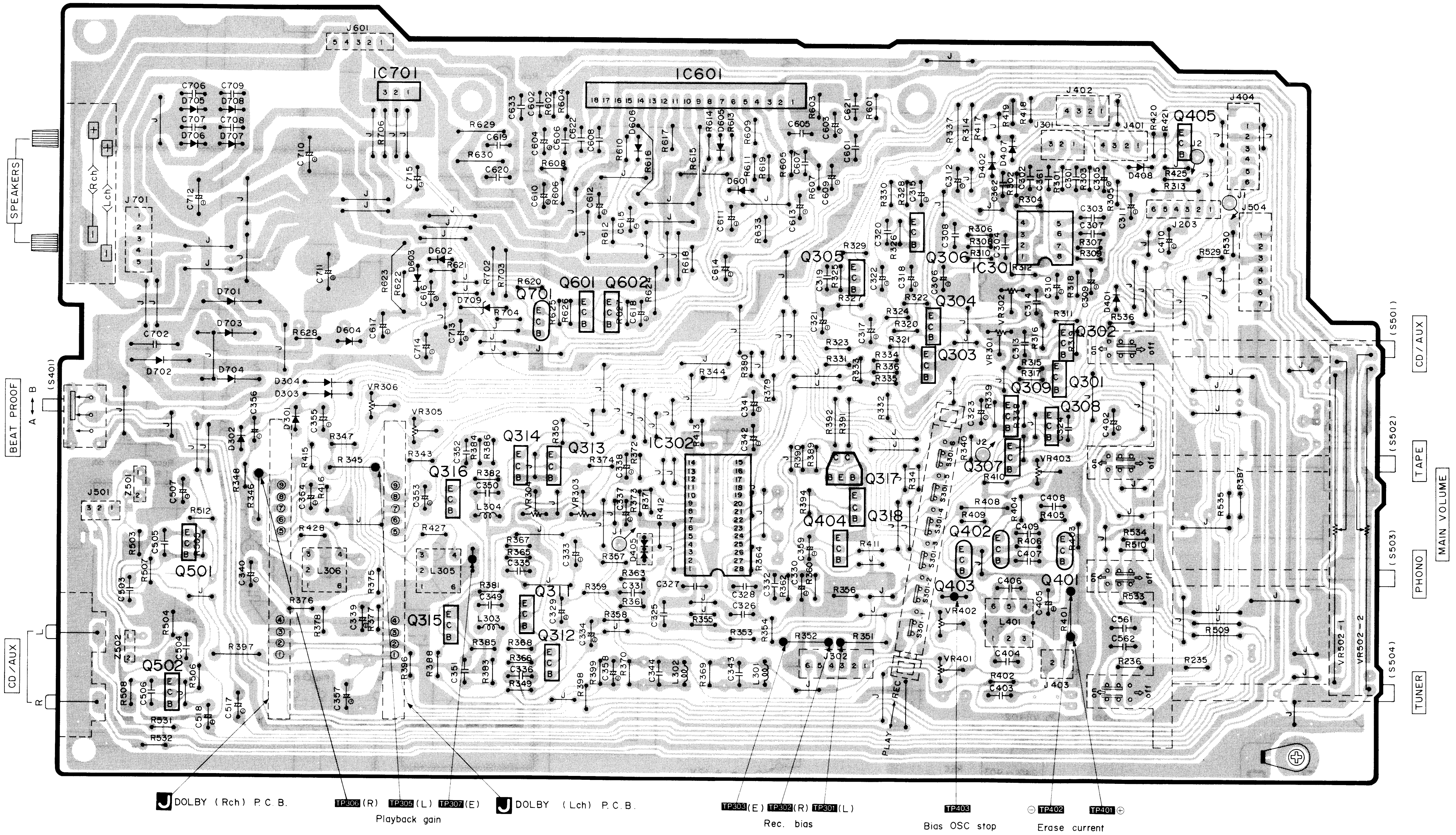
F H.P P.C.B


POWER
HEADPHONES
(S701)
F701 250V T500mA
J703
J702
R632
R631
J601

E P.T P.C.B

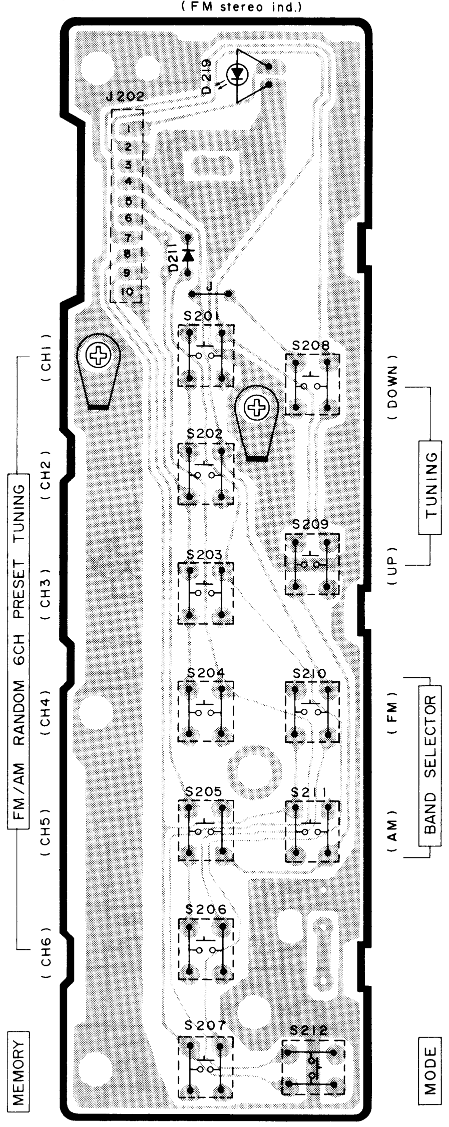

J703
C701
J702
701
702
T701
POWER TRANSFORMER
R707
J701

A MAIN P.C.B

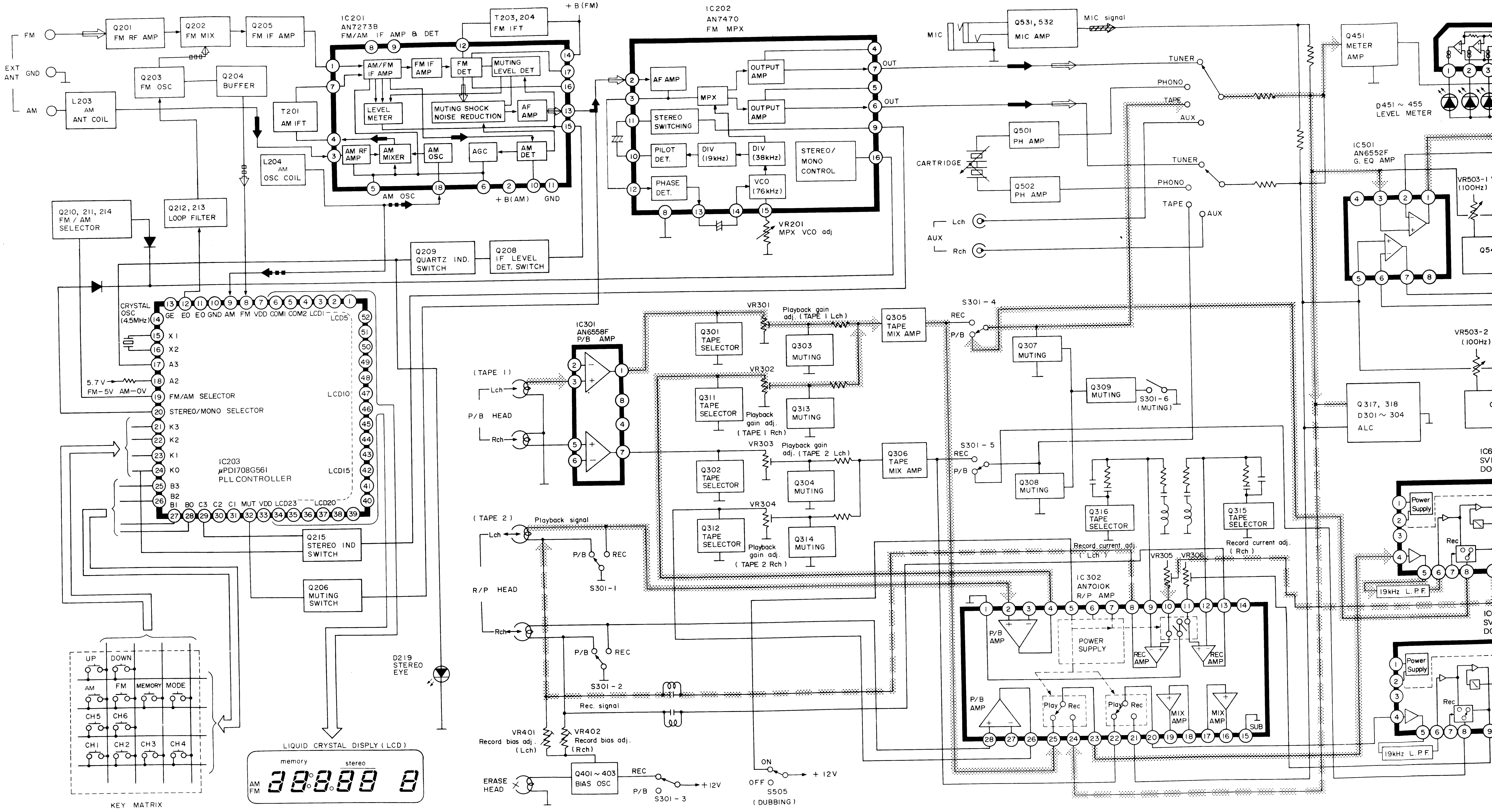

SPEAKERS
Rch
Lch
BEAT PROOF
A ⟷ B
(S401)
CD/AUX
L
R
J601
IC701
IC601
J701
D701
D702
D703
D704
C702
D304
D303
VR306
VR305
Q701
Q601
Q602
Q305
Q306
IC301
Q304
Q303
Q302
Q301
Q309
Q308
Q307
Q314
Q313
IC302
Q316
Q317
Q318
Q404
Q402
Q403
Q401
Q315
Q311
Q312
Q501
Q502
J501
Z501
Z502
L306
L305
L304
L303
L401
J302
J403
J402
J401
J301
J404
J504
J203
Q405
VR403
VR402
VR401
VR301
VR302
VR303
VR304
VR502-1
VR502-2
PLAY
REC
(S501)
CD/AUX
(S502)
TAPE
MAIN VOLUME
(S503)
PHONO
(S504)
TUNER
DOLBY (Rch) P.C.B.
TP306 (R)
TP305 (L)
TP307 (E)
Playback gain
DOLBY (Lch) P.C.B.
TP303 (E)
TP302 (R)
TP301 (L)
Rec. bias
TP403
Bias OSC stop
⊖ TP402
TP401 ⊕
Erase current

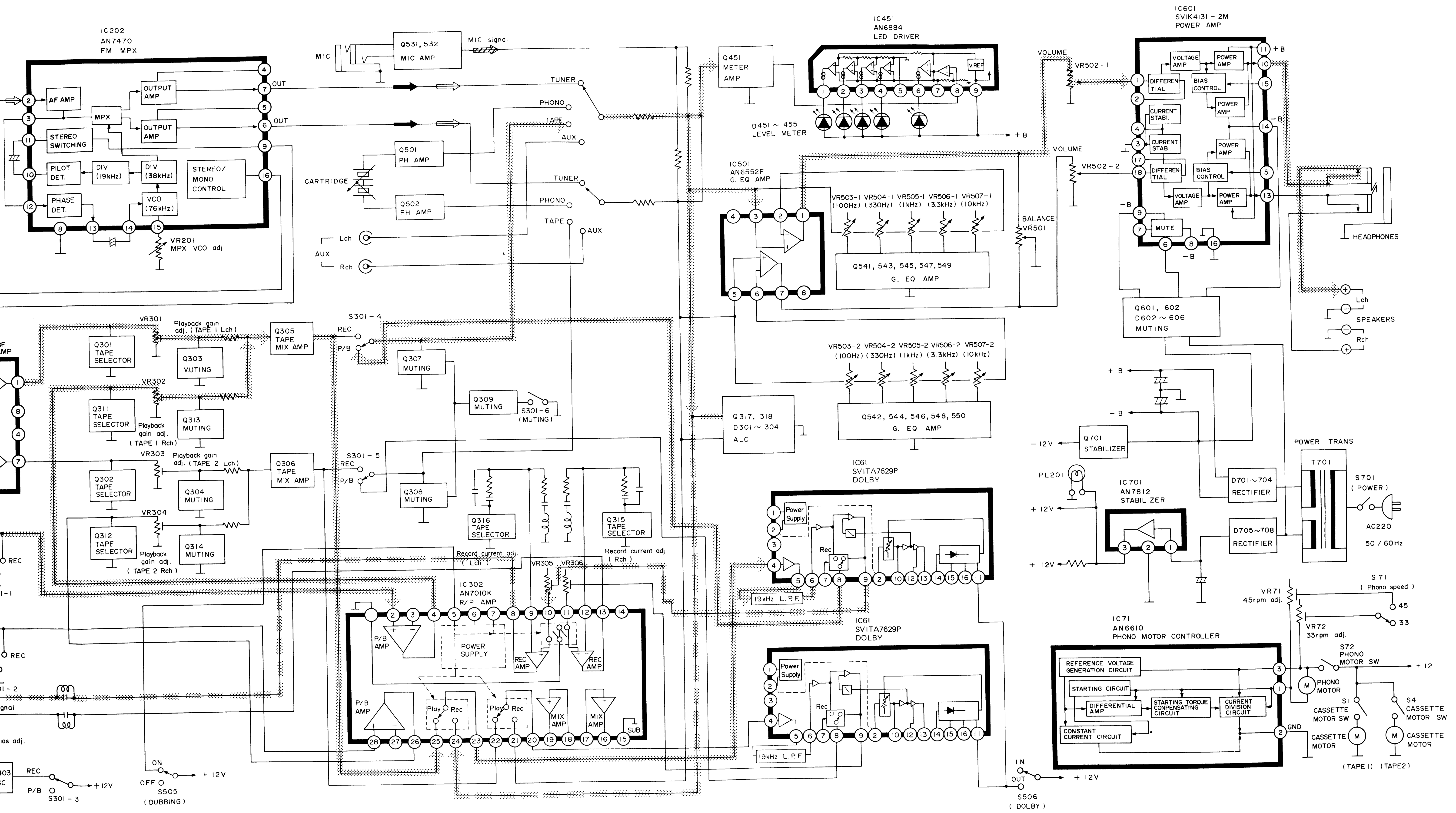
C SWITCH P.C.B

(FM stereo ind.)

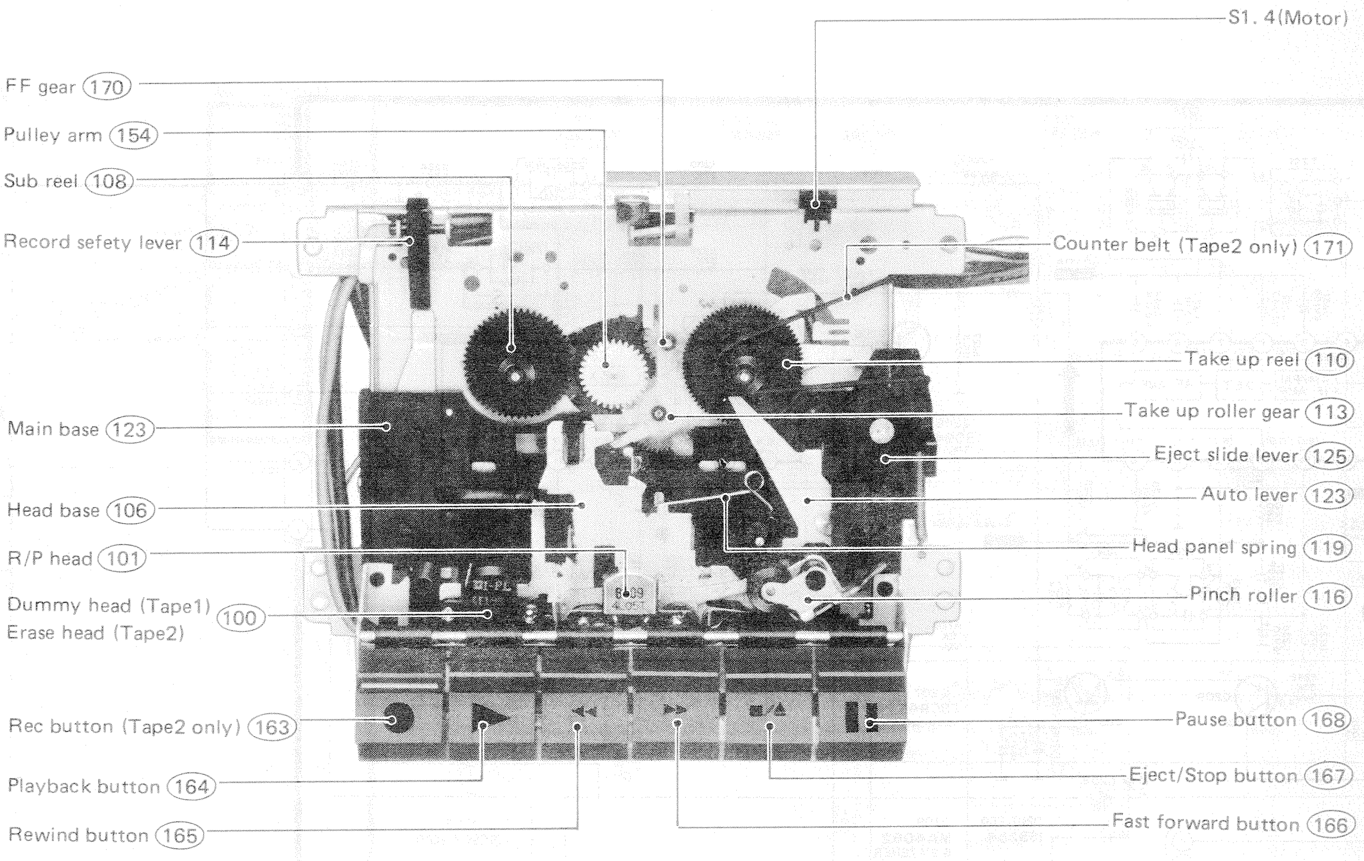

J202
D219
D211
S201
S202
S203
S204
S205
S206
S207
S208
S209
S210
S211
S212
FM/AM RANDOM 6CH PRESET TUNING
(CH1)
(CH2)
(CH3)
(CH4)
(CH5)
(CH6)
MEMORY
(DOWN)
TUNING
(UP)
(FM)
BAND SELECTOR
(AM)
MODE

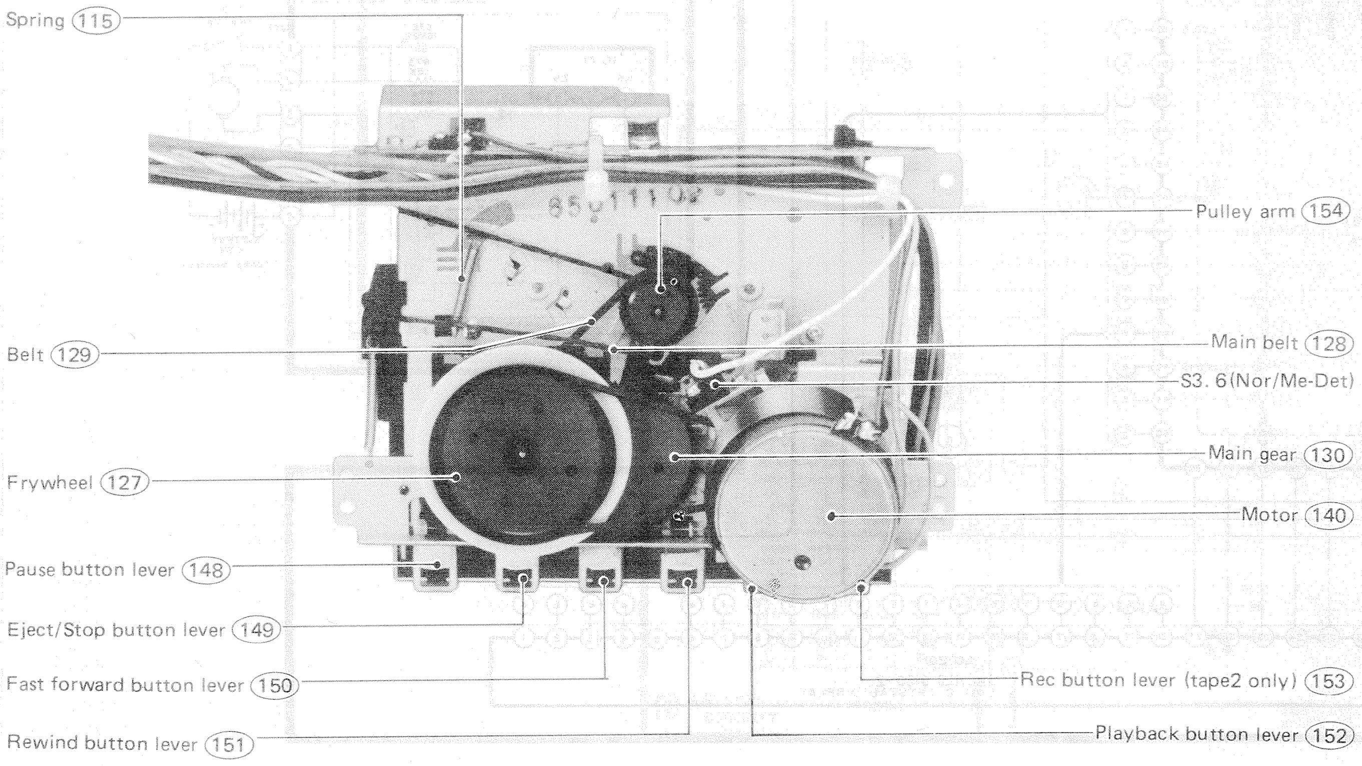
■ BLOCK DIAGRAM


FM
EXT ANT
GND
AM
Q201 FM RF AMP
Q202 FM MIX
Q205 FM IF AMP
Q203 FM OSC
Q204 BUFFER
L203 AM ANT COIL
IC201 AN7273B FM/AM IF AMP & DET
AM/FM IF AMP
FM IF AMP
FM DET
MUTING LEVEL DET
LEVEL METER
MUTING SHOCK NOISE REDUCTION
AF AMP
AM RF AMP
AM MIXER
AM OSC
AGC
AM DET
AM OSC
+B(AM)
GND
T203, 204 FM IFT
+B(FM)
T201 AM IFT
L204 AM OSC COIL
Q210, 211, 214 FM / AM SELECTOR
Q212, 213 LOOP FILTER
Q209 QUARTZ IND. SWITCH
Q208 IF LEVEL DET. SWITCH
IC202 AN7470 FM MPX
AF AMP
MPX
OUTPUT AMP
OUTPUT AMP
OUT
OUT
STEREO SWITCHING
PILOT DET.
DIV (19kHz)
DIV (38kHz)
STEREO/ MONO CONTROL
PHASE DET.
VCO (76kHz)
VR201 MPX VCO adj
CRYSTAL OSC (4.5MHz)
GE EO EO GND AM FM VDD COM1 COM2 LCD1
LCD5
X1
X2
A3
A2
5.7V
FM-5V AM-0V
FM/AM SELECTOR
STEREO/MONO SELECTOR
K3
K2
K1
K0
B3
B2
B1 B0 C3 C2 C1 MUT VDD LCD23 LCD20
LCD10
LCD15
IC203 μPD1708G561 PLL CONTROLLER
Q215 STEREO IND SWITCH
Q206 MUTING SWITCH
D219 STEREO EYE
UP
DOWN
AM
FM
MEMORY
MODE
CH5
CH6
CH1
CH2
CH3
CH4
KEY MATRIX
LIQUID CRYSTAL DISPLY (LCD)
memory
stereo
AM
FM
IC301 AN6558F P/B AMP
(TAPE 1)
Lch
P/B HEAD
Rch
(TAPE 2)
Playback signal
Lch
R/P HEAD
Rch
P/B
REC
S301-1
P/B
REC
S301-2
Rec. signal
VR401 Record bias adj. (Lch)
VR402 Record bias adj. (Rch)
ERASE HEAD
Q401~403 BIAS OSC
REC
P/B
S301-3
+12V
ON
OFF
S505 (DUBBING)
+12V
VR301
Playback gain adj. (TAPE 1 Lch)
Q301 TAPE SELECTOR
Q303 MUTING
VR302
Q311 TAPE SELECTOR
Playback gain adj. (TAPE 1 Rch)
Q313 MUTING
VR303
Playback gain adj. (TAPE 2 Lch)
Q302 TAPE SELECTOR
Q304 MUTING
VR304
Q312 TAPE SELECTOR
Playback gain adj. (TAPE 2 Rch)
Q314 MUTING
Q305 TAPE MIX AMP
Q306 TAPE MIX AMP
S301-4
REC
P/B
S301-5
REC
P/B
Q307 MUTING
Q308 MUTING
Q309 MUTING
S301-6 (MUTING)
Q316 TAPE SELECTOR
Q315 TAPE SELECTOR
Record current adj. (Lch)
Record current adj. (Rch)
VR305
VR306
IC302 AN7010K R/P AMP
P/B AMP
POWER SUPPLY
REC AMP
REC AMP
P/B AMP
Play Rec
Play Rec
MIX AMP
MIX AMP
SUB
MIC
Q531, 532 MIC AMP
MIC signal
TUNER
PHONO
TAPE
AUX
CARTRIDGE
Q501 PH AMP
Q502 PH AMP
TUNER
PHONO
TAPE
AUX
AUX
Lch
Rch
Q451 METER AMP
D451 ~ 455 LEVEL METER
IC501 AN6552F G. EQ AMP
VR503-1 (100Hz)
VR503-2 (100Hz)
Q54
Q317, 318 D301 ~ 304 ALC
IC6 SV DO
IC SV DO
Power Supply
Rec
19kHz L.P.F
Power Supply
Rec
19kHz L.P.F

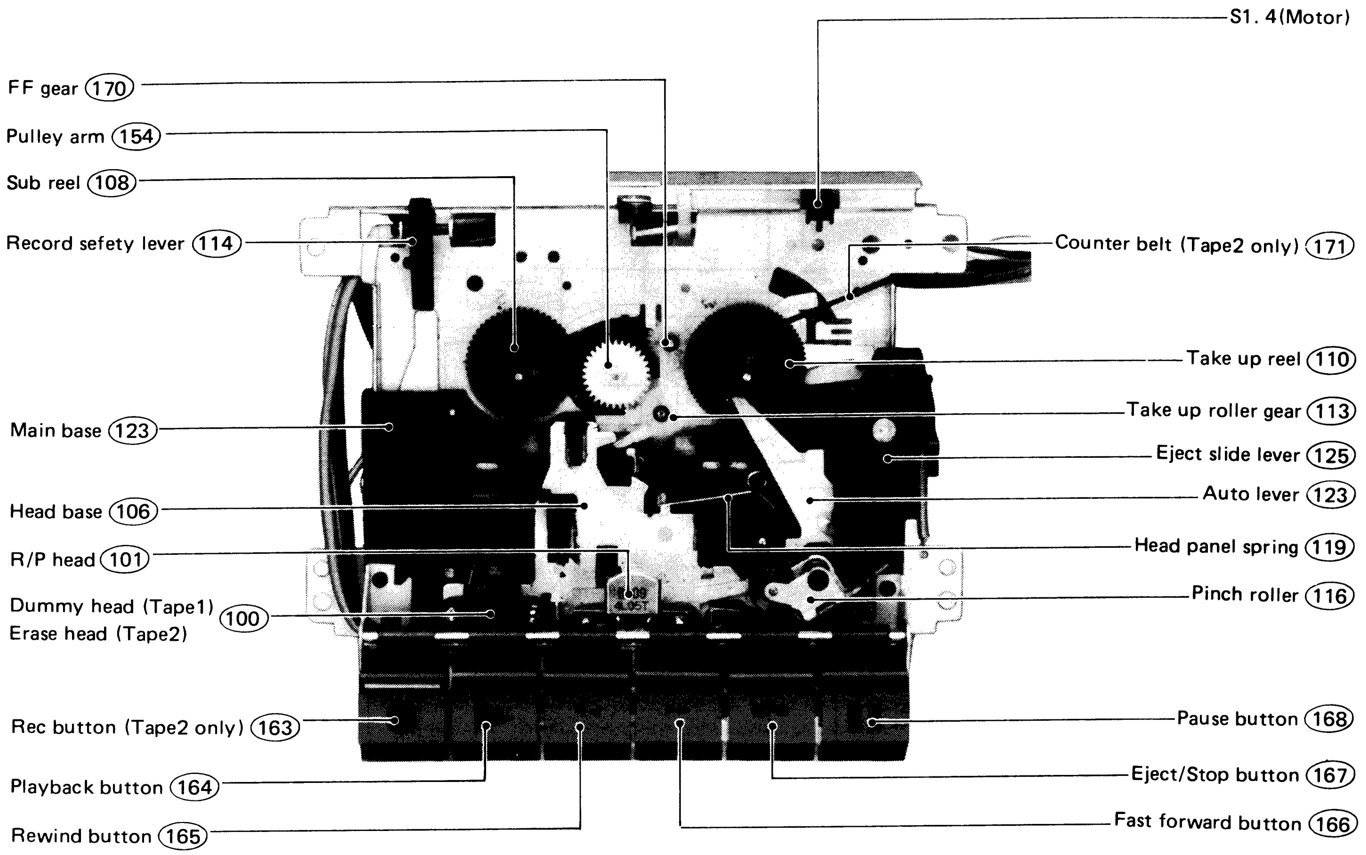

IC202
AN7470
FM MPX
AF AMP
MPX
OUTPUT AMP
OUTPUT AMP
STEREO SWITCHING
PILOT DET.
DIV (19kHz)
DIV (38kHz)
STEREO/ MONO CONTROL
PHASE DET.
VCO (76kHz)
OUT
OUT
VR201
MPX VCO adj
MIC
Q531, 532
MIC AMP
MIC signal
TUNER
PHONO
TAPE
AUX
CARTRIDGE
Q501
PH AMP
Q502
PH AMP
TUNER
PHONO
TAPE
AUX
Lch
AUX
Rch
Q451
METER AMP
IC451
AN6884
LED DRIVER
VREF
D451 ~ 455
LEVEL METER
+ B
IC501
AN6552F
G. EQ AMP
VR503-1 VR504-1 VR505-1 VR506-1 VR507-1
(100Hz) (330Hz) (1kHz) (3.3kHz) (10kHz)
Q541, 543, 545, 547, 549
G. EQ AMP
VR503-2 VR504-2 VR505-2 VR506-2 VR507-2
(100Hz) (330Hz) (1kHz) (3.3kHz) (10kHz)
Q542, 544, 546, 548, 550
G. EQ AMP
Q317, 318
D301 ~ 304
ALC
VOLUME
VR502-1
VOLUME
VR502-2
BALANCE
VR501
IC601
SVIK4131-2M
POWER AMP
VOLTAGE AMP
POWER AMP
DIFFERENTIAL
BIAS CONTROL
CURRENT STABI.
POWER AMP
CURRENT STABI.
POWER AMP
DIFFERENTIAL
BIAS CONTROL
VOLTAGE AMP
POWER AMP
MUTE
+B
-B
-B
-B
HEADPHONES
Lch
SPEAKERS
Rch
Q601, 602
D602 ~ 606
MUTING
+ B
- B
- 12V
Q701
STABILIZER
POWER TRANS
T701
S701
(POWER)
AC220
50 / 60Hz
PL201
IC701
AN7812
STABILIZER
+ 12V
+ 12V
D701 ~ 704
RECTIFIER
D705 ~ 708
RECTIFIER
IF AMP
VR301
Playback gain adj. (TAPE 1 Lch)
Q301
TAPE SELECTOR
Q303
MUTING
Q305
TAPE MIX AMP
S301 - 4
REC
P/B
Q307
MUTING
VR302
Q311
TAPE SELECTOR
Playback gain adj.
(TAPE 1 Rch)
Q313
MUTING
Q309
MUTING
S301 - 6
(MUTING)
VR303
Playback gain adj. (TAPE 2 Lch)
Q302
TAPE SELECTOR
Q304
MUTING
Q306
TAPE MIX AMP
S301 - 5
REC
P/B
Q308
MUTING
VR304
Q312
TAPE SELECTOR
Playback gain adj.
(TAPE 2 Rch)
Q314
MUTING
Q316
TAPE SELECTOR
Q315
TAPE SELECTOR
Record current adj.
(Lch)
Record current adj.
(Rch)
VR305
VR306
IC302
AN7010K
R/P AMP
P/B AMP
POWER SUPPLY
REC AMP
REC AMP
P/B AMP
Play
Rec
Play
Rec
MIX AMP
MIX AMP
SUB
REC
REC
I - 1
I - 2
gnal
ias adj.
303
C
REC
P/B
S301 - 3
+ 12V
ON
OFF
S505
(DUBBING)
+ 12V
IC61
SVITA7629P
DOLBY
Power Supply
Rec
19kHz L.P.F
IC61
SVITA7629P
DOLBY
Power Supply
Rec
19kHz L.P.F
IN
OUT
S506
(DOLBY)
+ 12V
IC71
AN6610
PHONO MOTOR CONTROLLER
REFERENCE VOLTAGE GENERATION CIRCUIT
STARTING CIRCUIT
DIFFERENTIAL AMP
STARTING TORQUE COMPENSATING CIRCUIT
CURRENT DIVISION CIRCUIT
CONSTANT CURRENT CIRCUIT
GND
VR71
45rpm adj.
VR72
33rpm adj.
S71
(Phono speed)
45
33
S72
PHONO MOTOR SW
+ 12
PHONO MOTOR
S1
CASSETTE MOTOR SW
S4
CASSETTE MOTOR SW
CASSETTE MOTOR
CASSETTE MOTOR
(TAPE 1)
(TAPE 2)

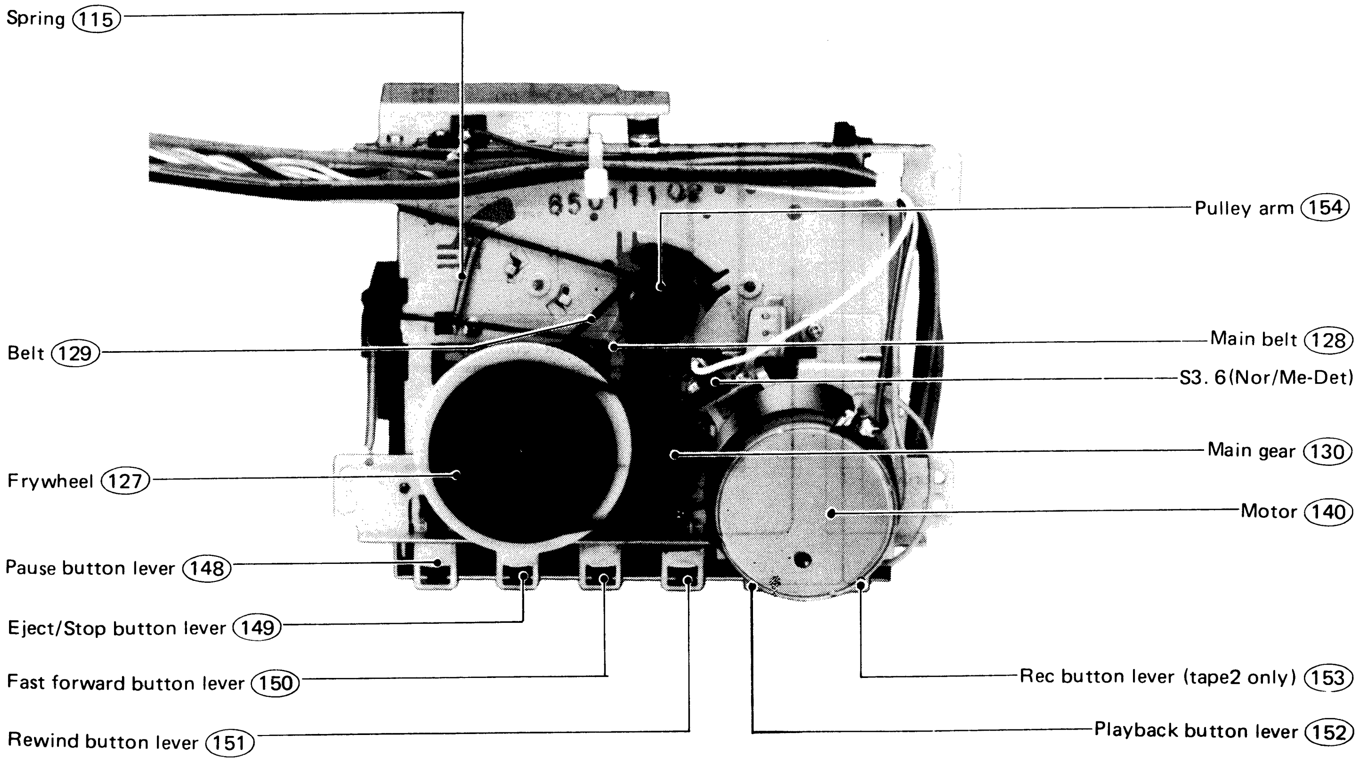
LOCATION OF CASSETTE DECK


S1. 4(Motor)
FF gear (170)
Pulley arm (154)
Sub reel (108)
Record sefety lever (114)
Counter belt (Tape2 only) (171)
Take up reel (110)
Take up roller gear (113)
Main base (123)
Eject slide lever (125)
Auto lever (123)
Head base (106)
Head panel spring (119)
R/P head (101)
Pinch roller (116)
Dummy head (Tape1)
Erase head (Tape2) (100)
Rec button (Tape2 only) (163)
Pause button (168)
Playback button (164)
Eject/Stop button (167)
Rewind button (165)
Fast forward button (166)

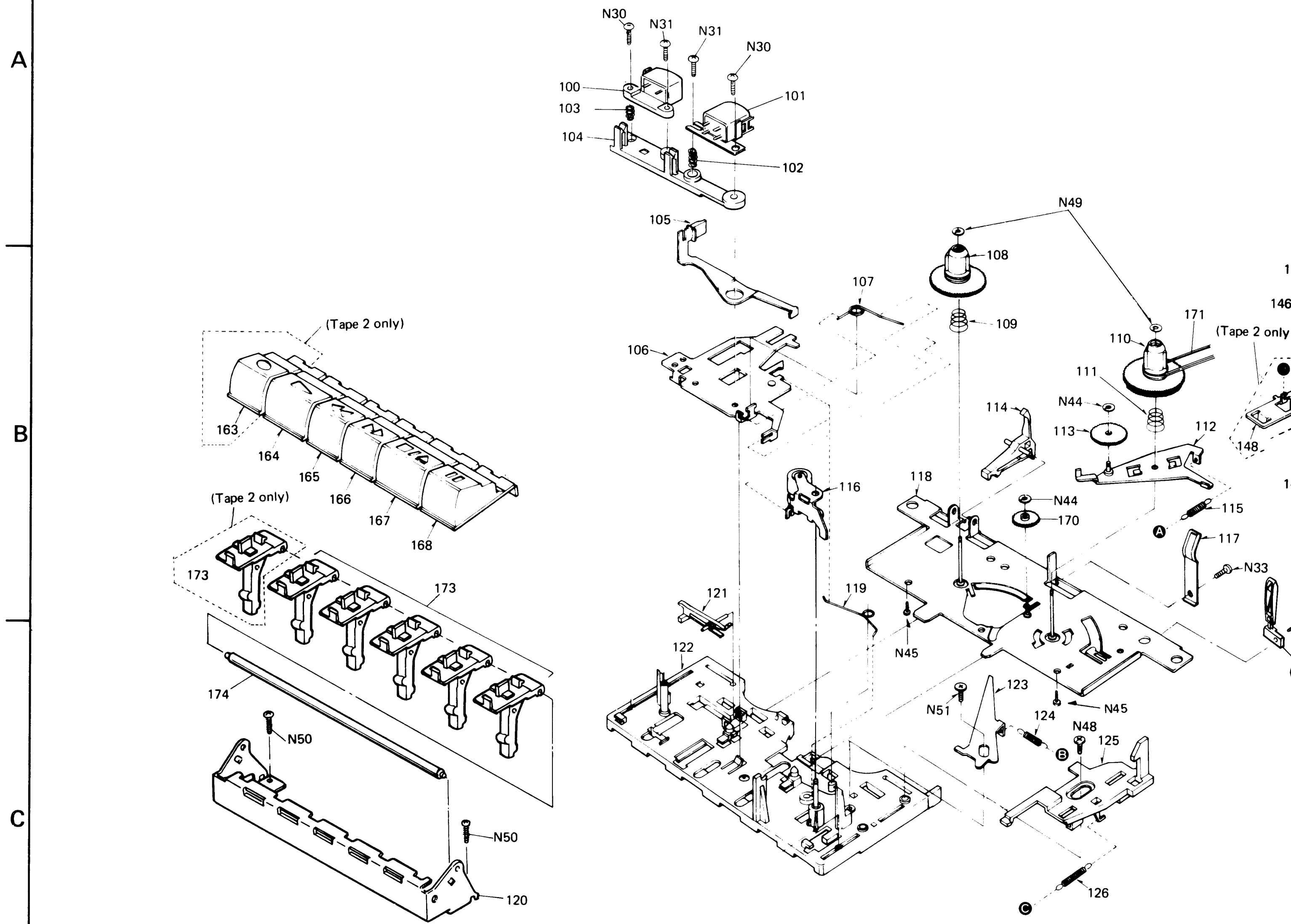

Spring (115)
Pulley arm (154)
Belt (129)
Main belt (128)
S3. 6(Nor/Me-Det)
Main gear (130)
Frywheel (127)
Motor (140)
Pause button lever (148)
Eject/Stop button lever (149)
Fast forward button lever (150)
Rec button lever (tape2 only) (153)
Rewind button lever (151)
Playback button lever (152)

■ LOCATION OF CASSETTE DECK


S1. 4(Motor)
FF gear (170)
Pulley arm (154)
Sub reel (108)
Record sefety lever (114)
Counter belt (Tape2 only) (171)
Take up reel (110)
Take up roller gear (113)
Main base (123)
Eject slide lever (125)
Auto lever (123)
Head base (106)
Head panel spring (119)
R/P head (101)
Pinch roller (116)
Dummy head (Tape1) (100)
Erase head (Tape2)
Rec button (Tape2 only) (163)
Pause button (168)
Playback button (164)
Eject/Stop button (167)
Rewind button (165)
Fast forward button (166)


Spring (115)
Pulley arm (154)
Belt (129)
Main belt (128)
S3. 6(Nor/Me-Det)
Frywheel (127)
Main gear (130)
Motor (140)
Pause button lever (148)
Eject/Stop button lever (149)
Rec button lever (tape2 only) (153)
Fast forward button lever (150)
Playback button lever (152)
Rewind button lever (151)

■ PARTS LOCATION OF CASSETTE TAPE DECK (tape 1, tape 2)


A
B
C
N30
N31
N31
N30
100
103
104
101
102
N49
105
108
107
109
146
(Tape 2 only)
171
110
111
N44
113
112
106
114
148
163
164
165
166
167
168
(Tape 2 only)
116
118
N44
170
115
117
N33
173
173
121
119
122
N45
123
N51
124
N45
N48
125
174
N50
N50
120
126

A	104 100 103 105 102 101 144
B	173 163 164 165 166 167 168 173 106 121 107 116 119 118 108 114 109 170 113 111 110 171 112 117 115 148 146 149
C	174 120 122 123 124 126 125

Ref.No.	Part No.	Description
CASSETTE TAPE DECK PARTS		
100	SJHE700XE SJH94	Dummy Head (TAPE1 only) (1) Erase Head (TAPE2 only) (1)
101	SJH92	R/P Head (2)
102	RFS447Z	Spring (2)
103	SMQT1469	Spring (2)
104	SMQT1468	Head Base (2)
105	RFY394Z	Sensing Plate Ass'y (2)
106	SMQT1467	Head Base Ass'y (2)
107	RFS448Z	Pinch Roller Spring (2)
108	RFJ43Z	Sub Reel Ass'y (2)
109	SMQT1470	Spring (2)
110	RFJ44Z	Take up Reel Ass'y (2)
111	SMQT1471	Reel Spring (2)
112	RFG71Z	Take up Gear Plate Ass'y (2)
113	RFG61Z	Take up Roller Gear (2)
114	SMQ4778	Record Safety Lever (TAPE2 only) (1)
115	RFS450Z	Plate Spring (2)
CASSETTE TAPE DECK PARTS		
116	RFR26Z	Pinch Roller Ass'y (2)
117	RFS467Z	Pack Spring (2)
118	RFU40Z	Reel Base Ass'y (2)
119	RFS452Z	Head Panel Spring (2)
120	SMQT1477	Frame (2)
121	RFX100Z	Play Sensing Piece (2)
122	RFU41Z	Main Base Ass'y (2)
123	RFY414Z	Auto Lever (2)
124	RFS453Z	Auto Lever Spring (2)
125	SMQT1475	Eject Slide Lever (2)
126	RFS454Z	Eject Slide Lever Spring (2)
127	RFF32Z	Frywheel Ass'y (2)
128	RFB46Z	Main Belt (2)
129	RFB47Z	Belt (2)
130	RFG72Z	Main Gear (2)
131	RFS455Z	Main Gear Spring (2)
132	RFS465Z	Record Arm Spring (2)
133	SMQT1481	Record Function Arm (2)
134	RFS456Z	Record Spring (1)
135	RFY417Z	Record Function Arm (TAPE2 only) (1)
136	RFS457Z	Record Sensor Spring(TAPE2 only) (1)
CASSETTE TAPE DECK PARTS		
137	RFY418Z	Record Sensor (TAPE2 only) (1)
138	RFS458Z	Record Arm Spring (2)
139	RFY419Z	Trigger Ass'y (2)
140	MMI5A2LB	Motor (2)
141	RFI27Z	Motor Rubber (3)
142	SMQT1474	Motor Pulley (2)
143	SMQT1473	Motor Bracket (2)
144	RFU43Z	Supply Reel Ass'y (2)
145	SMQT1463	Pause Stopper (2)
146	RFS459Z	Pause Lever Spring (2)
147	RFY420Z	Pause Lever (2)
148	RFY421Z	Pause Button Lever Ass'y (2)
149	RFY422Z	Eject/Stop Button Lever (2)
150	RFY423Z	Fast Forward Button Lever (2)
151	RFY424Z	Rewind Button Lever (2)
152	RFY425Z	Playback Button Lever (2)
153	RFY426Z	Rec Button Lever (TAPE2 only) (1)
CASSETTE TA		
154	RF	
155	RF	
156	SM	
157	RF	
158	RF	
159	RF	
160	RF	
161	RF	
162	RF	
163	SB	
164	SB	
165	SB	
166	SB	
167	SB	
168	SB	
169	SM	
170	RF	
171	QD	
172	SM	
173	SM	

4(Motor)

nly) (171)

reel (110)

gear (113)

lever (125)

lever (123)

pring (119)

oller (116)

tton (168)

tton (167)

utton (166)

arm (154)

belt (128)

or/Me-Det)

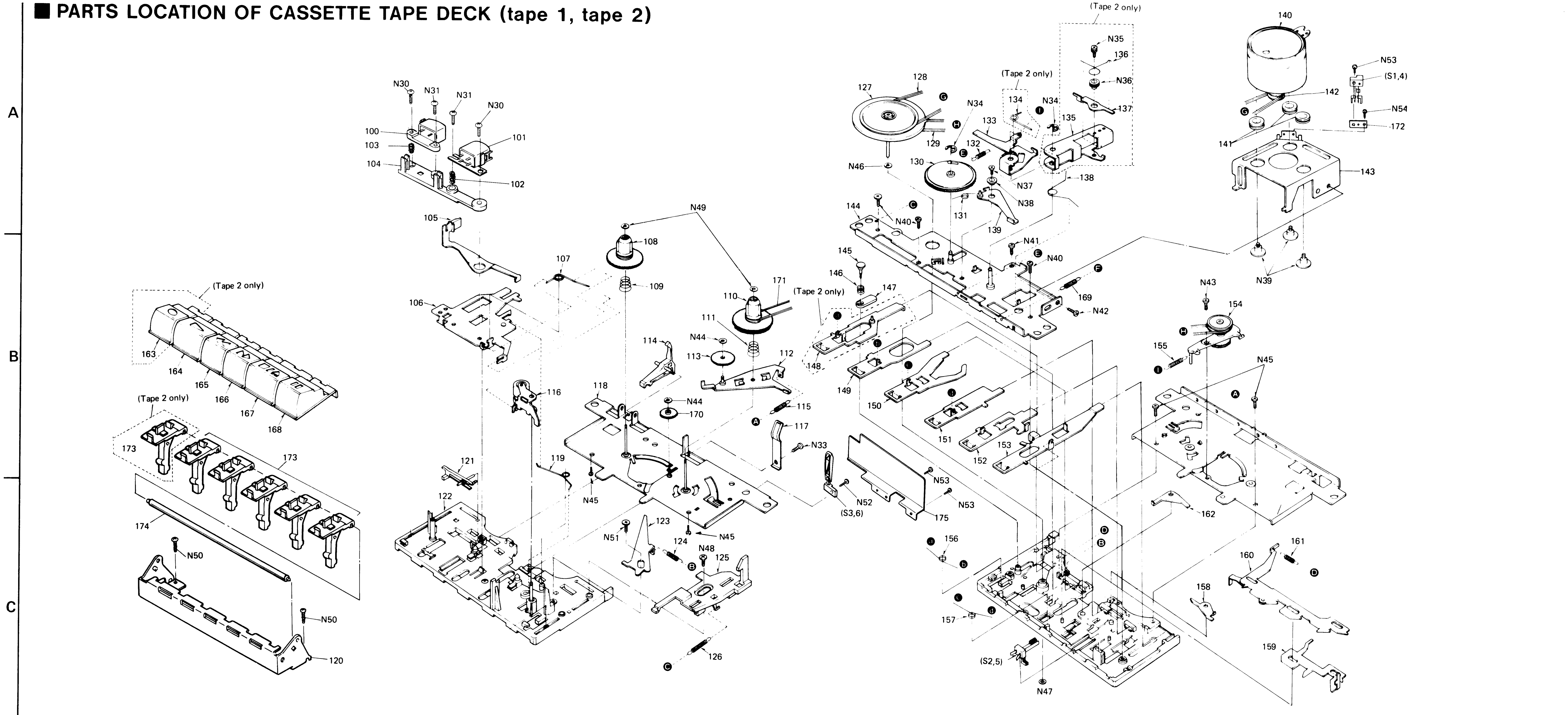
gear (130)

Motor (140)

nly) (153)

lever (152)

■ PARTS LOCATION OF CASSETTE TAPE DECK (tape 1, tape 2)


A
B
C
(Tape 2 only)
N30
N31
N31
N30
100
103
104
101
102
105
107
106
N49
108
109
110
111
171
(Tape 2 only)
N44
113
112
114
116
118
N44
170
115
117
N33
119
121
122
N45
N51
123
124
N48
N45
125
126
163
164
165
166
167
168
173
173
174
N50
N50
120
127
128
129
130
131
132
133
134
N34
N34
135
N35
136
N36
137
138
N37
N38
139
N46
144
N40
N41
N40
145
146
147
148
149
150
151
152
153
169
N42
175
N52
(S3,6)
N53
N53
156
157
(S2,5)
N47
140
N53
(S1,4)
142
N54
172
141
143
N39
N43
154
155
N45
162
161
160
158
159

A	104 100 103 105 102 101 144 127 130 128 129 131 132 133 139 134 135 138 136 137 141 140 142 143 172
B	173 163 164 165 166 167 168 173 106 121 107 116 119 118 108 114 109 170 113 111 110 171 112 117 115 148 146 149 145 150 147 151 152 153 169 155 154
C	174 120 122 123 124 126 125 157 156 175 158 162 160 159 161

Ref.No.	Part No.	Description	
CASSETTE TAPE DECK PARTS			
100	SJHE700XE	Dummy Head (TAPE1 only)	(1)
	SJH94	Erase Head (TAPE2 only)	(1)
101	SJH92	R/P Head	(2)
102	RFS447Z	Spring	(2)
103	SMQT1469	Spring	(2)
104	SMQT1468	Head Base	(2)
105	RFY394Z	Sensing Plate Ass'y	(2)
106	SMQT1467	Head Base Ass'y	(2)
107	RFS448Z	Pinch Roller Spring	(2)
108	RFJ43Z	Sub Reel Ass'y	(2)
109	SMQT1470	Spring	(2)
110	RFJ44Z	Take up Reel Ass'y	(2)
111	SMQT1471	Reel Spring	(2)
112	RFG71Z	Take up Gear Plate Ass'y	(2)
113	RFG61Z	Take up Roller Gear	(2)
114	SMQ4778	Record Safety Lever (TAPE2 only)	(1)
115	RFS450Z	Plate Spring	(2)
116	RFR26Z	Pinch Roller Ass'y	(2)
117	RFS467Z	Pack Spring	(2)
118	RFU40Z	Reel Base Ass'y	(2)
119	RFS452Z	Head Panel Spring	(2)
120	SMQT1477	Frame	(2)
121	RFX100Z	Play Sensing Piece	(2)
122	RFU41Z	Main Base Ass'y	(2)
123	RFY414Z	Auto Lever	(2)
124	RFS453Z	Auto Lever Spring	(2)
125	SMQT1475	Eject Slide Lever	(2)
126	RFS454Z	Eject Slide Lever Spring	(2)
127	RFF32Z	Frywheel Ass'y	(2)
128	RFB46Z	Main Belt	(2)
129	RFB47Z	Belt	(2)
130	RFG72Z	Main Gear	(2)
131	RFS455Z	Main Gear Spring	(2)
132	RFS465Z	Record Arm Spring	(2)
133	SMQT1481	Record Function Arm	(2)
134	RFS456Z	Record Spring	(1)
135	RFY417Z	Record Function Arm (TAPE2 only)	(1)
136	RFS457Z	Record Sensor Spring(TAPE2 only)	(1)
137	RFY418Z	Record Sensor (TAPE2 only)	(1)
138	RFS458Z	Record Arm Spring	(2)
139	RFY419Z	Trigger Ass'y	(2)
140	MMI5A2LB	Motor	(2)
141	RFI27Z	Motor Rubber	(3)
142	SMQT1474	Motor Pulley	(2)
143	SMQT1473	Motor Bracket	(2)
144	RFU43Z	Supply Reel Ass'y	(2)
145	SMQT1463	Pause Stopper	(2)
146	RFS459Z	Pause Lever Spring	(2)
147	RFY420Z	Pause Lever	(2)
148	RFY421Z	Pause Button Lever Ass'y	(2)
149	RFY422Z	Eject/Stop Button Lever	(2)
150	RFY423Z	Fast Forward Button Lever	(2)
151	RFY424Z	Rewind Button Lever	(2)
152	RFY425Z	Playback Button Lever	(2)
153	RFY426Z	Rec Button Lever (TAPE2 only)	(1)
154	RFK11Z	Pulley Arm Ass'y	(2)
155	RFS461Z	Pulley Arm Spring	(2)
156	SMQT1464	Button Lever Spring	(2)
157	RFS462Z	Button Lever Spring	(2)
158	RFX101Z	P.R.Stopper	(2)
159	RFY427Z	Switch Plate	(2)
160	RFY429Z	Push Button Actuator Ass'y	(2)
161	RFS466Z	Actuator Spring	(2)
162	RFY428Z	RWD Lever	(2)
163	SBC746	Button,Recording (TAPE2 only)	(1)
164	SBC747	Button,Playback	(2)
165	SBC748	Button,Rewind	(2)
166	SBC749	Button,Fast forward	(2)
167	SBC750	Button,Eject/Stop	(2)
168	SBC751	Button,Pause	(2)
169	SMQT1465	Button Lever Spring	(2)
170	RFG62Z	FF Gear	(2)
171	QDB0143-2	Counter Belt (TAPE2 only)	(1)
172	SMQT1472	Switch Bracket	(1)
173	SMQT1478	Button Lever	(1)
174	SMQT1479	Button Lever Shaft	(2)
175	SMQT1483	Switch Cover	(2)
SCREWS			
N30	XSN2+7	Tapping,⊕2×7	(2)
N31	XSN2+8	Azimuth Screw, ⊕2×7	(2)
N32	XSN2+8	Tapping,⊕2×8	(2)
N33	SMQT1482	Collar Screw (For Camera)	(2)
N34	XUC2FT	E Ring ϕ2	(4)
N35	XSN2+5	Tams Screw,⊕2×5 (TAPE2 only)	(2)
N36	RFX103Z	Record Sencer Collar(TAPE2 only)	(1)
N37	SMQ4926	Tapping,⊕2×25 (For Camera)	(2)
N38	SMQT1480	Collar	(2)
N39	SMQ4918	Motor Collar Screw	(3)
N40	XSN2+4	Tapping Bind ⊕2×4	(6)
N41	XSN2+5	Tapping,⊕2×5	(4)
N42	XTN2+4FN	Tapping,⊕2×4	(6)
N43	RFE172Z	Arm Collar Screw	(2)
N44	RFN143Z	Polyethylene Washer	(4)
N45	XTN2+35FN	Tapping,⊕2×35	(4)
N46	SMQ4932	Polyethylene Washer	(2)
N47	RFN123Z	Polyethylene Washer	(2)
N48	SMQT1476	Slide Lever Screw	(2)
N49	RFN142Z	Polyethylene Washer	(4)
N50	XQN2+7	Tapping,⊕2×7	(4)
N51	RFE146Z	Auto Lever Pin	(2)
N52	XTB2+5	Tapping,⊕2×5	(2)
N53	XSN2+3	⊕2×3	(6)
N54	XSN2+5	⊕2×5	(2)
N55	XSN2+6	⊕2×6	(2)

SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

- The part No. of transistors IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with ✪ mark, the production part No. are different from the replacement part No. Therfore, when placing an order for replacement parts, please use the part No. in the replacement parts list.

NOTES

1. Tape1 **S1** :Cassette motor switch in **"off"** position.
S2 :Muting switch in **"off"** position.
S3 :Tape selector switch in **"normal"** position.
2. Tape2 **S4** :Cassette motor switch in **"off"** position.
S5 :Muting switch in **"off"** position.
S6 :Tape selector switch in **"normal"** position.
3. S71 :Phono speed selector switch in **"33rpm"** position. (45 ←→ 33)
4. S72 :Phono motor switch in **"off"** position.
5. S201～206 :Preset tuning switch.
6. S207 :Memory switch.
7. S208,209 :Tuning (up, down) switch S208 down, S209 up
8. S210,211 :Band selector switch S210 FM, S211 AM allocation (9kHz/10kHz step)
9. S212 :Mode switch.
10. S301 :Rec / Play selector switch in " **PLAY** " position.
11. S401 :Beat proof switch in "**B**" position.
12. S501～504 :Input selector switch in "**tuner**" position.
:S501 CD/AUX, S502 Tape, S503 Phono, S504 Tuner
13. S505 :Dubbing switch in "**off**" position. (off ←→ on)
14. S506 :Dolby, NR switch "**out**" position. (out ←→ in)
15. S701 :Power source switch in "**on**" position.

16. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

*All voltage values shown in circuitry are DC voltage in FM signal (monaural signal) reception mode.

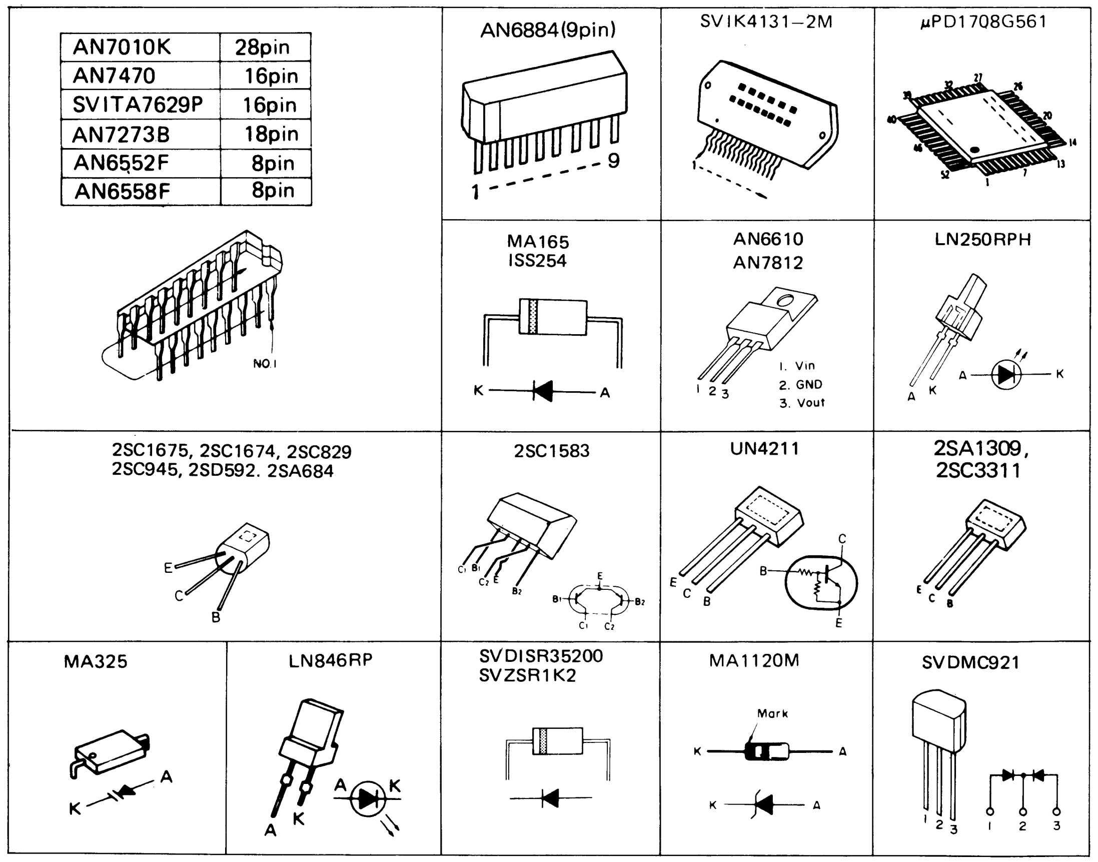
* Figures in ( ) stand for DC voltage in RECORDING (Normal) signal reception mode

* Figures in [ ] stand for DC voltage in RECORDING (Metal) signal reception mode.

* Figures in [[ ]] stand for DC voltage in playing signal reception mode.

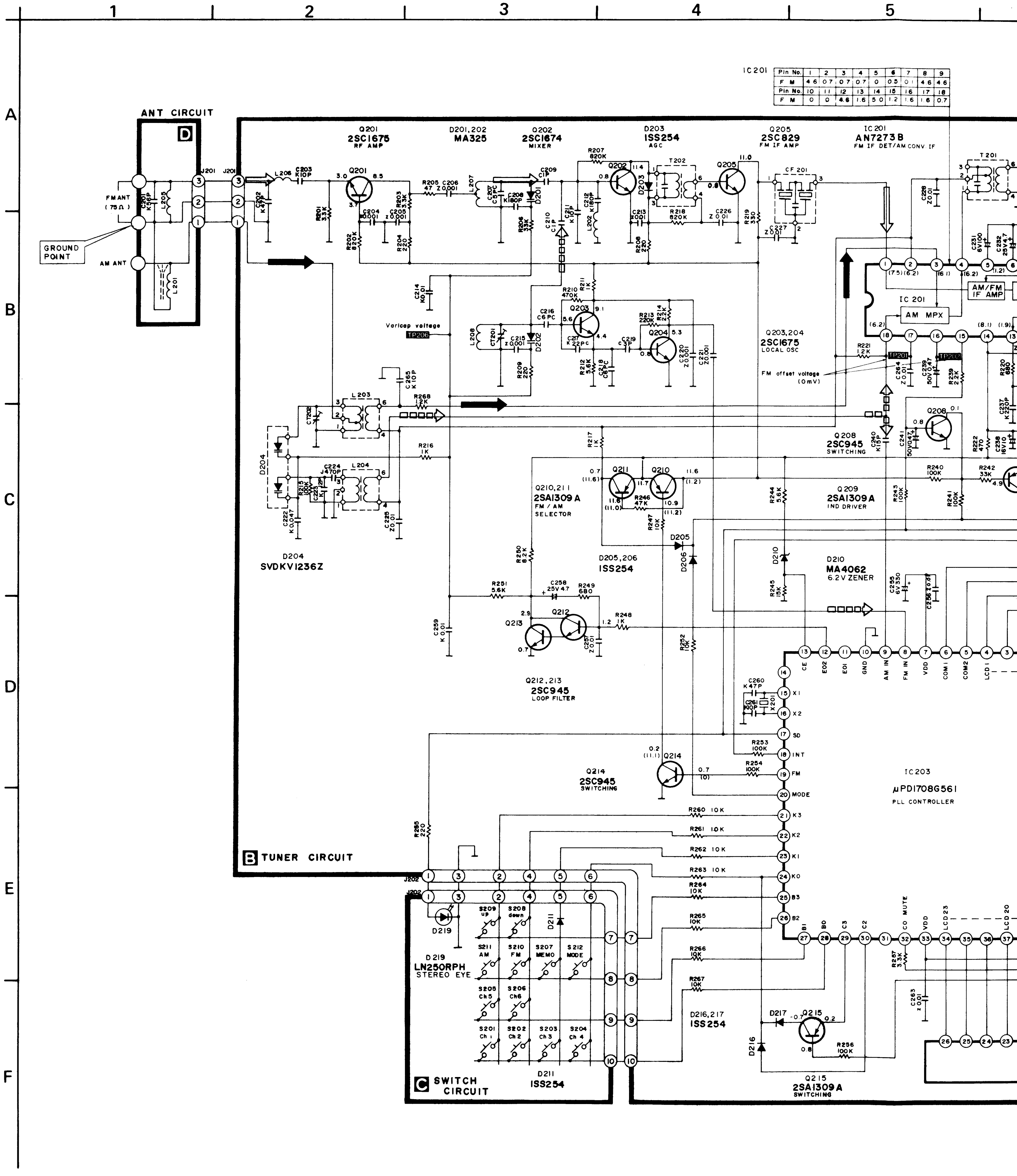
—— Positive voltage lines ⇨ FM signal ▭▭▭⇨ FM OSC ▨⇨ MIC signal
➡ AM signal ■■■➡ AM OSC ░⇨ Tuner, Tape P/B, PH and AF signal lines
░⇨ Rec signal

TERMINAL GUIDE OF TRANSISTOR, DIODES AND IC'S



AN7010K	28pin
AN7470	16pin
SVITA7629P	16pin
AN7273B	18pin
AN6552F	8pin
AN6558F	8pin

NO.1
AN6884(9pin)
1
9
SVIK4131–2M
µPD1708G561
MA165
ISS254
K
A
AN6610
AN7812
1. Vin
2. GND
3. Vout
1 2 3
LN250RPH
A K
2SC1675, 2SC1674, 2SC829
2SC945, 2SD592. 2SA684
E
C
B
2SC1583
UN4211
2SA1309,
2SC3311
MA325
LN846RP
SVDISR35200
SVZSR1K2
MA1120M
Mark
SVDMC921
1 2 3



1
2
3
4
5
A
B
C
D
E
F
ANT CIRCUIT
D
FM ANT (75Ω)
GROUND POINT
AM ANT
L201
J201
Q201
2SC1675
RF AMP
D201,202
MA325
Q202
2SC1674
MIXER
D203
ISS254
AGC
Q205
2SC829
FM IF AMP
IC201
AN7273B
FM IF DET/AM CONV IF
T202
CF201
T201
IC 201
AM/FM IF AMP
AM MPX
Varicap voltage
TP206
Q203,204
2SC1675
LOCAL OSC
FM offset voltage (0mV)
TP201
TP202
L203
L204
D204
SVDKV1236Z
Q208
2SC945
SWITCHING
Q209
2SA1309A
IND DRIVER
Q210,211
2SA1309A
FM / AM SELECTOR
D205,206
ISS254
D210
MA4062
6.2V ZENER
Q212,213
2SC945
LOOP FILTER
Q214
2SC945
SWITCHING
IC203
µPD1708G561
PLL CONTROLLER
B TUNER CIRCUIT
J202
S209 up
S208 down
S211 AM
S210 FM
S207 MEMO
S212 MODE
S205 Ch5
S206 Ch6
S201 Ch1
S202 Ch2
S203 Ch3
S204 Ch4
D219
LN250RPH
STEREO EYE
C SWITCH CIRCUIT
D211
ISS254
D216,217
ISS254
Q215
2SA1309A
SWITCHING

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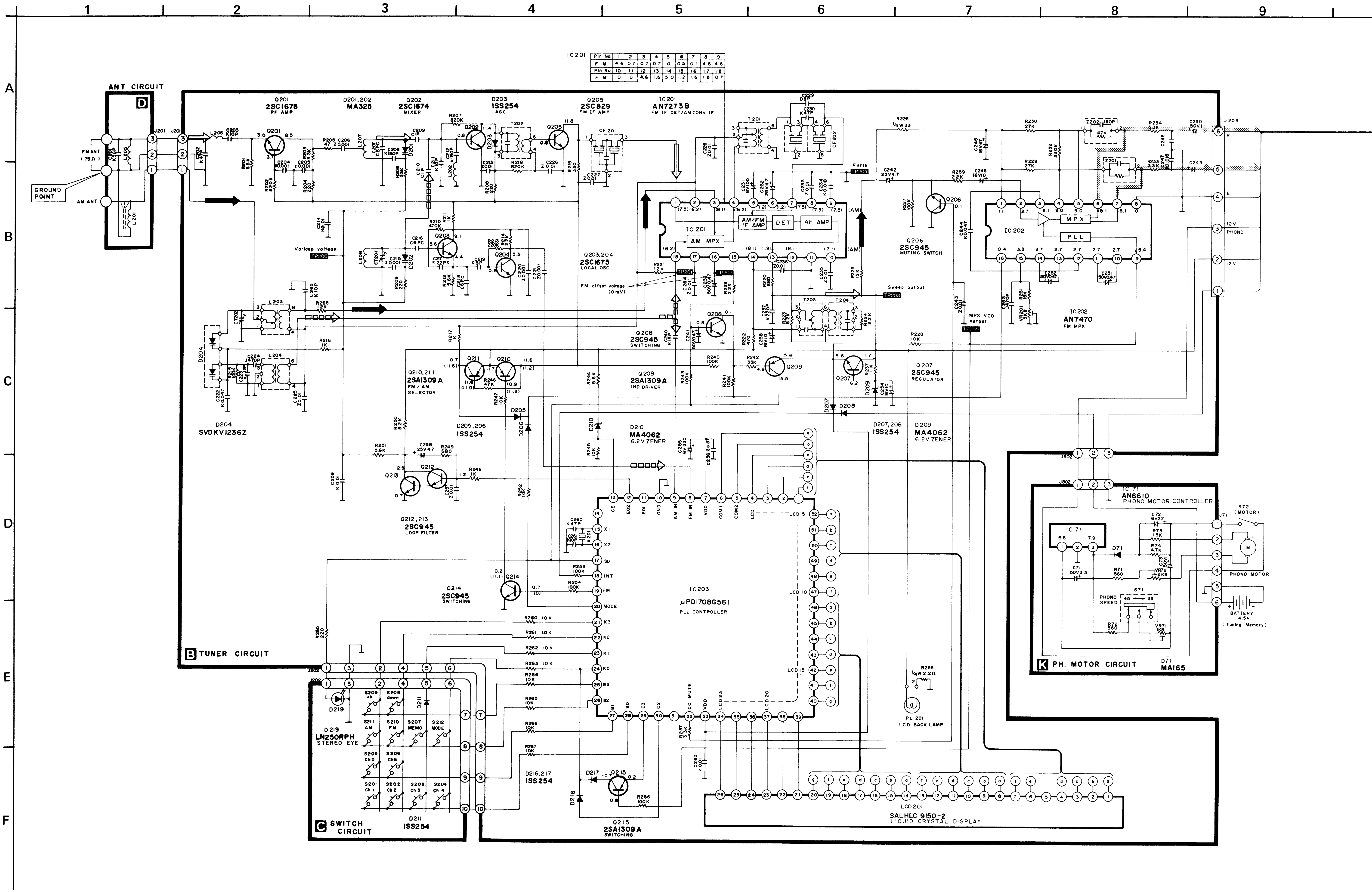
IC201

Pin No.	1	2	3	4	5	6	7	8	9
F M	4.6	0.7	0.7	0.7	0	0.5	0.1	4.6	4.6
Pin No.	10	11	12	13	14	15	16	17	18
F M	0	0	4.6	1.6	5.0	1.2	1.6	1.6	0.7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A
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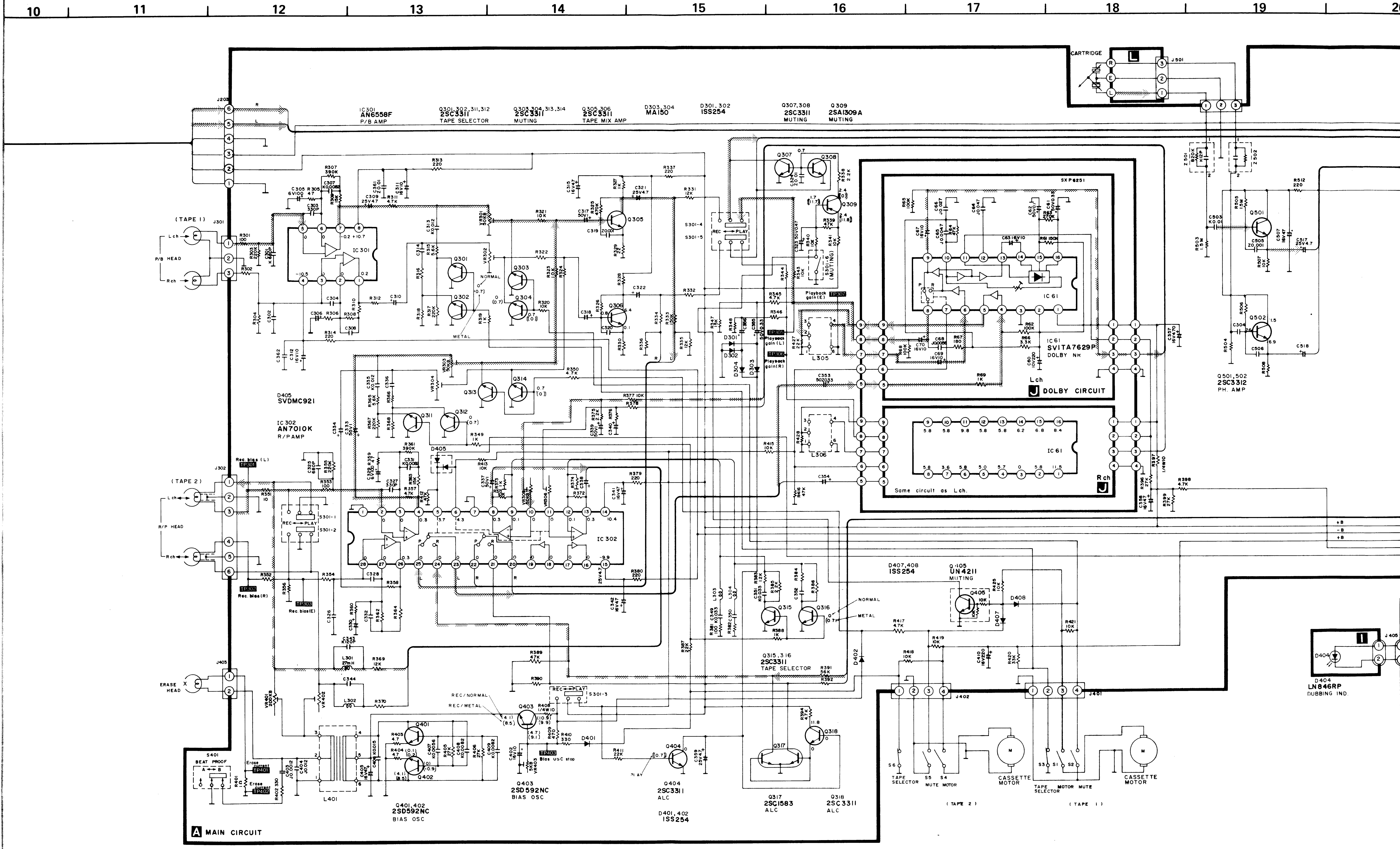
F
ANT CIRCUIT
D
FM ANT (75Ω)
GROUND POINT
AM ANT
L201
J201
Q201 2SC1675 RF AMP
D201,202 MA325
Q202 2SC1674 MIXER
D203 1SS254 AGC
Q205 2SC829 FM IF AMP
IC201 AN7273B FM IF DET/AM CONV IF
T201
T202
CF201
CF202
AM/FM IF AMP
DET
AF AMP
AM MPX
Earth
TP204
TP200
TP201
TP202
TP203
Varicap voltage
FM offset voltage (0mV)
Sweep output
MPX VCO output
Q203,204 2SC1675 LOCAL OSC
Q206 2SC945 MUTING SWITCH
IC202 AN7470 FM MPX
MPX
PLL
J203
R
L
E
12V PHONO
12V
Q208 2SC945 SWITCHING
Q209 2SA1309A IND DRIVER
Q207 2SC945 REGULATOR
Q210,211 2SA1309A FM/AM SELECTOR
D204 SVDKV1236Z
D205,206 1SS254
D207,208 1SS254
D209 MA4062 6.2V ZENER
D210 MA4062 6.2V ZENER
Q212,213 2SC945 LOOP FILTER
Q214 2SC945 SWITCHING
IC203 μPD1708G561 PLL CONTROLLER
CE
EO2
EO1
GND
AM IN
FM IN
VDD
COM1
COM2
LCD1
LCD5
LCD10
LCD15
LCD20
LCD23
CO MUTE
X1
X2
SD
INT
FM
MODE
K3
K2
K1
K0
B3
B2
B1
B0
C3
C2
B TUNER CIRCUIT
J202
D219 LN250RPH STEREO EYE
S209 up
S208 down
S211 AM
S210 FM
S207 MEMO
S212 MODE
S205 Ch5
S206 Ch6
S201 Ch1
S202 Ch2
S203 Ch3
S204 Ch4
D211 1SS254
C SWITCH CIRCUIT
D216,217 1SS254
Q215 2SA1309A SWITCHING
PL201 LCD BACK LAMP
R258 1/4W 2.2Ω
LCD201 SALHLC 9150-2 LIQUID CRYSTAL DISPLAY
J502
IC71 AN6610 PHONO MOTOR CONTROLLER
J71
S72 (MOTOR)
PHONO MOTOR
BATTERY 4.5V (Tuning Memory)
PHONO SPEED
S71
45 ⟷ 33
D71 MA165
K PH. MOTOR CIRCUIT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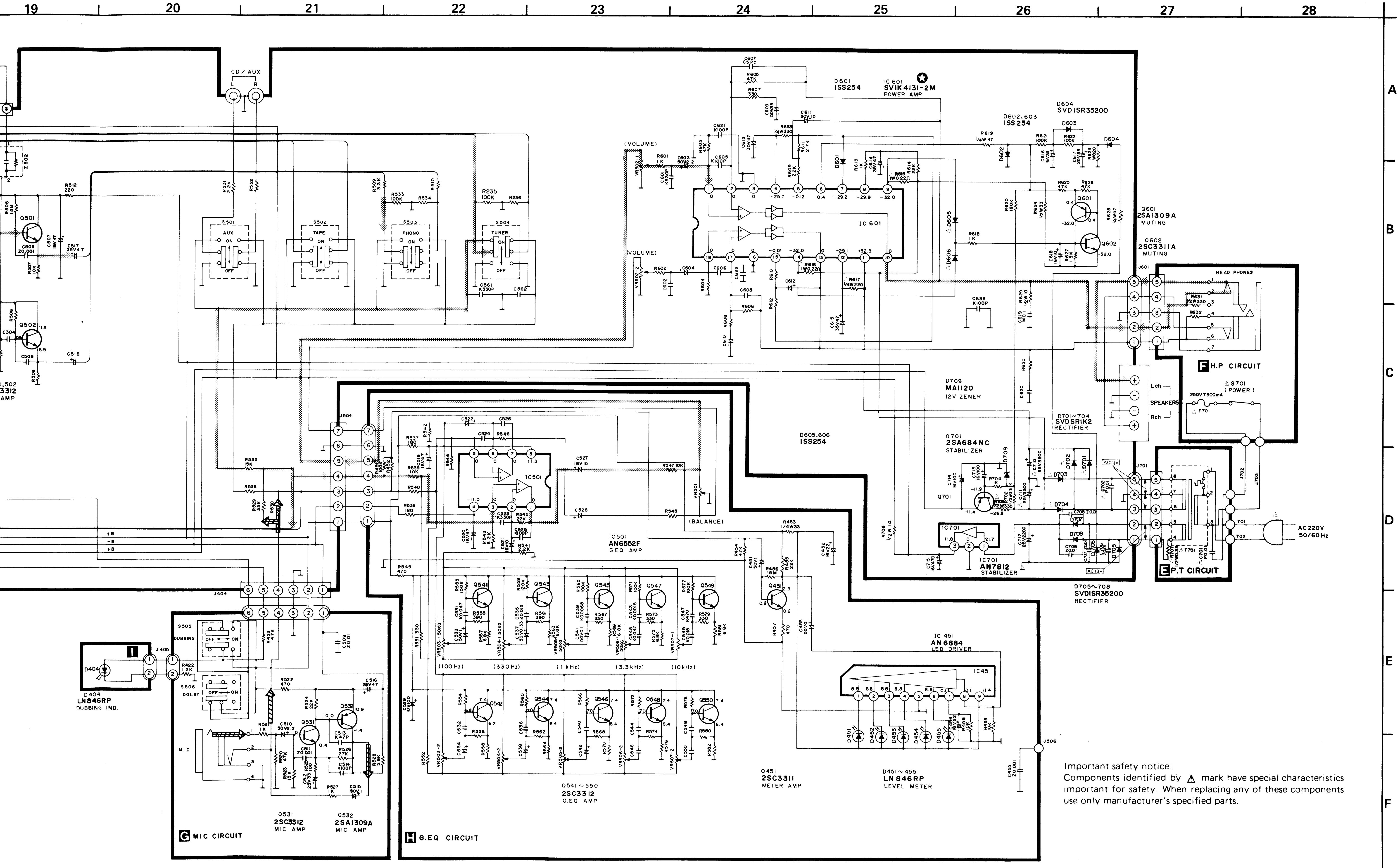
CARTRIDGE
J501
J203
IC301
AN6558F
P/B AMP
Q301,302,311,312
2SC3311
TAPE SELECTOR
Q303,304,313,314
2SC3311
MUTING
Q305,306
2SC3311
TAPE MIX AMP
D303,304
MA150
D301,302
1SS254
Q307,308
2SC3311
MUTING
Q309
2SA1309A
MUTING
(TAPE 1)
J301
P/B HEAD
Lch
Rch
S301-4
S301-5
REC ⟷ PLAY
S301-6 (MUTING)
Playback gain(E)
TP307
TP305 Playback gain(L)
TP306 Playback gain(R)
L305
L306
SXP6251
IC61
SVITA7629P
DOLBY NR
Lch
J DOLBY CIRCUIT
Same circuit as Lch.
Rch
J
Z501
Z502
Q501,502
2SC3312
PH. AMP
D405
SVDMC921
IC302
AN7010K
R/P AMP
NORMAL
METAL
Rec.bias (L)
TP301
(TAPE 2)
J302
R/P HEAD
S301-1
S301-2
TP302
Rec.bias(R)
TP303
Rec.bias(E)
IC 302
J403
ERASE HEAD
L301 27mH
L302
VR401
VR402
REC/NORMAL
REC/METAL
S301-3
Q403
TP403
Bias OSC stop
D401
S401
BEAT PROOF
Erase current TP401
Erase current TP402
L401
Q401,402
2SD592NC
BIAS OSC
Q403
2SD592NC
BIAS OSC
Q404
2SC3311
ALC
D401,402
1SS254
Q315,316
2SC3311
TAPE SELECTOR
Q317
2SC1583
ALC
Q318
2SC3311
ALC
D402
D407,408
1SS254
Q405
UN4211
MUTING
D408
D407
J402
J401
S6
TAPE SELECTOR
S5
S4
MUTE MOTOR
CASSETTE MOTOR
S3
S1
S2
TAPE SELECTOR
MOTOR
MUTE
CASSETTE MOTOR
(TAPE 2)
(TAPE 1)
+B
-B
+B
J405
D404
LN846RP
DUBBING IND
A MAIN CIRCUIT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A
B
C
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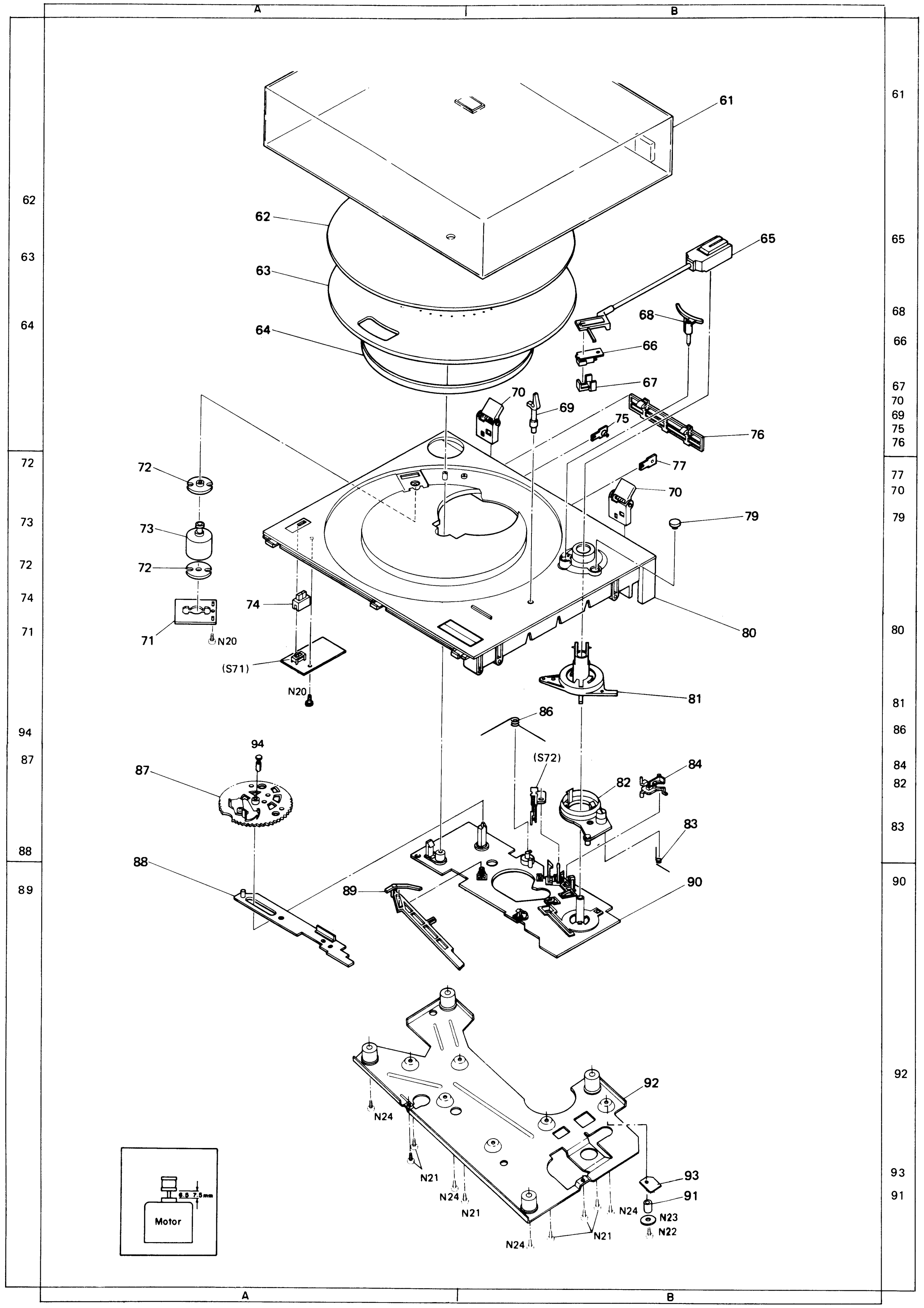
F
CD / AUX
L
R
(VOLUME)
(BALANCE)
S501 AUX
S502 TAPE
S503 PHONO
S504 TUNER
ON
OFF
Q501
Q502
J504
J404
J405
IC501
IC 601
D601
ISS254
IC 601
SVIK4131-2M
POWER AMP
D602,603
ISS 254
D604
SVDISR35200
Q601
2SAI309A
MUTING
Q602
2SC3311A
MUTING
J601
HEAD PHONES
F H.P CIRCUIT
Lch
SPEAKERS
Rch
⚠S701
(POWER)
250V T500mA
⚠F701
D709
MA1120
12V ZENER
D701~704
SVDSRIK2
RECTIFIER
D605,606
ISS254
Q701
2SA684NC
STABILIZER
IC701
AN7812
STABILIZER
J701
AC23V
AC18V
D705~708
SVDISR35200
RECTIFIER
E P.T CIRCUIT
AC220V
50/60Hz
IC501
AN6552F
G.EQ AMP
Q541
Q543
Q545
Q547
Q549
Q542
Q544
Q546
Q548
Q550
(100 Hz)
(330 Hz)
(1 kHz)
(3.3 kHz)
(10 kHz)
Q541~550
2SC3312
G.EQ AMP
H G.EQ CIRCUIT
Q451
2SC3311
METER AMP
IC 451
AN 6884
LED DRIVER
IC451
D451~455
LN846RP
LEVEL METER
J506
I
D404
LN846RP
DUBBING IND.
S505
DUBBING
S506
DOLBY
MIC
Q531
2SC3312
MIC AMP
Q532
2SA1309A
MIC AMP
G MIC CIRCUIT

Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

PARTS LOCATION OF RECORD PLAYER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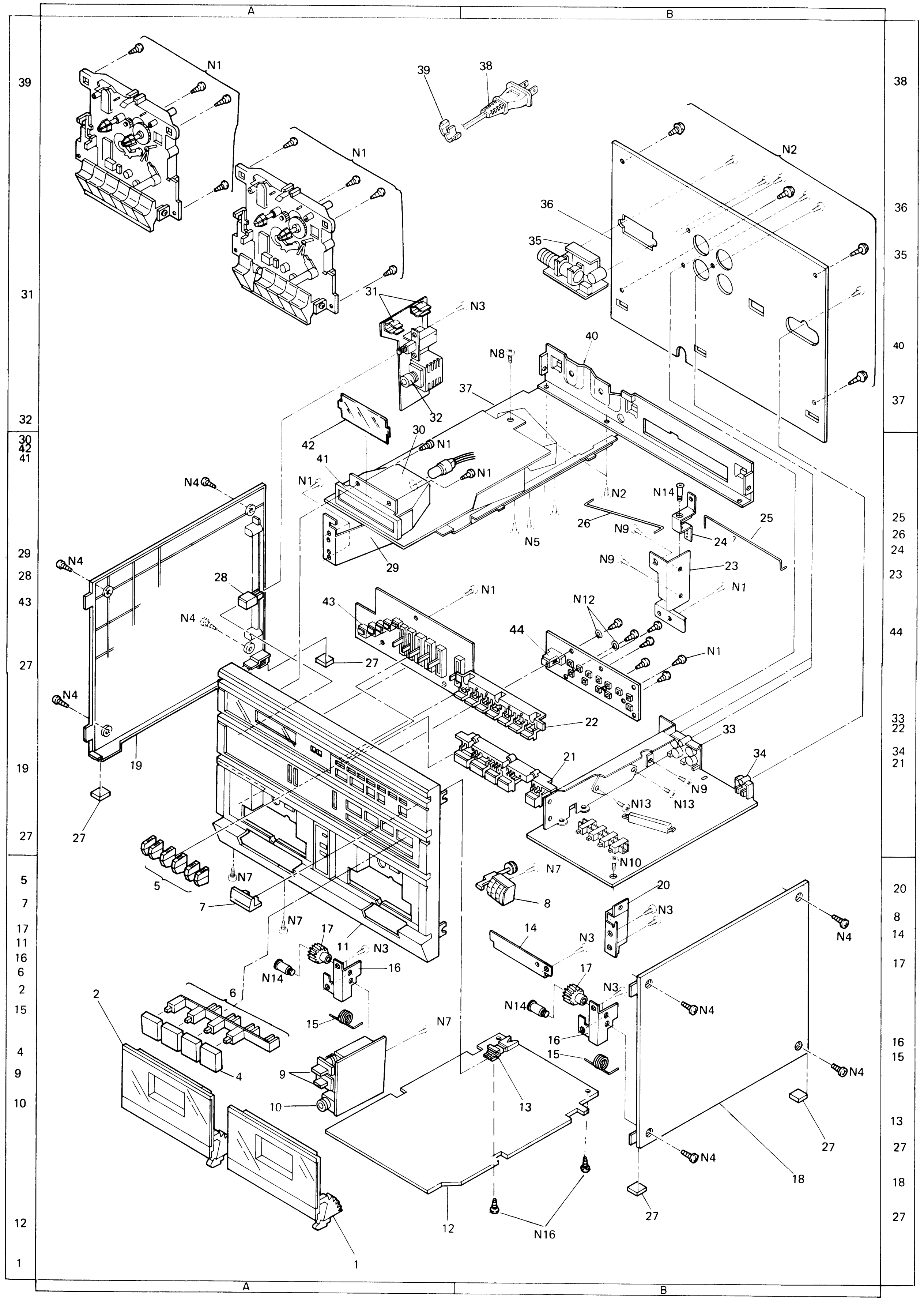
(S71)
(S72)
N20
N21
N22
N23
N24
Motor
6.8
7.5mm

PARTS LOCATION OF CABINET AND CHASSIS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N1
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N13
N14
N16

REPLAC

Notes:

1. Part numb
Please use
2. Important
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Ref.No.
INTEGRATED CIRC
IC61
IC71
IC201
IC202
IC203
IC301
IC302
IC451
IC501
IC601
IC701
TRANSISTORS
Q201,203,204
Q202
Q205
Q206～208, 212～214
Q209～211,215, 309,532,601
Q301～308, 311～316,318, 404,451
Q317
Q401～403
Q405
Q501,502,531, 541～550
Q602
Q701
DIODES
D71
D201,202
D203,205～208, 211,216,217, 301,302,401, 402,407,408

- CABINET A

Ref.No.	Part
CABINET AND CHAS	
1	SYE1099
2	SYE1100
4	SBC662
5	SBD118
6	SUB240
7	SBD98-1
8	SJN13
9	SBC315-4
10	SJJ63D
11	SGYGD30-
12	SKU11300
13	SHR9774
14	SGEGD30L-
15	SMQ60016
16	SMQ30025-
17	SMQ4096
18	SKM7560U
19	SKM7550U
20	SUW2942

REPLACEMENT PARTS LIST

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. The "Ⓢ" mark is service standard parts and may differ from production parts.
4. Bracketed indications in Ref. No. columns specify the area.
5. Parts without these indications can be used for all areas. The parenthesized numbers in the column of description stand for the quantity per set.

Ref.No.	Part No.	Description
INTEGRATED CIRCUITS		
IC61	SVITA7629P	Integrated Circuit
IC71	AN6610	Integrated Circuit
IC201	AN7273B	Integrated Circuit
IC202	SVIUPC1161C3	Integrated Circuit
IC203	UPD1708G561	Integrated Circuit
IC301	AN6558F	Integrated Circuit
IC302	AN7010K	Integrated Circuit
IC451	AN6884	Integrated Circuit
IC501	AN6552F	Integrated Circuit
IC601	STK4131-2M	Integrated Circuit
IC701	AN7812	Integrated Circuit
TRANSISTORS		
Q201,203,204	2SC1675-L	Transistor
Q202	2SC1674M	Transistor
Q205	2SC829-C1	Transistor
Q206～208, 212～214	2SC1815Y	Transistor
Q209～211,215, 309,532,601	2SA1309AR	Transistor
Q301～308, 311～316,318, 404,451	2SC3311-Q	Transistor
Q317	2SC1583-G	Transistor
Q401～403	2SD592NC-R	Transistor
Q405	UN4211	Transistor
Q501,502,531, 541～550	2SC3312R	Transistor
Q602	2SC3311AR	Transistor
Q701	2SA684-RNC	Transistor
DIODES		
D71	MA165	Diode
D201,202	MA325G-Y	Diode
D203,205～208, 211,216,217, 301,302,401, 402,407,408	1SS254	Diode

Ref.No.	Part No.	Description
DIODES		
D204	SVDKV1236Z	Diode
D209,210	MA4062-M	Diode
D219	LN250RPH	LED
D303,304 Ⓢ	MA162A	Diode
D404,451～455	LN846RP	LED
D405	SVDMC921	Diode
D601,602,603, ⚠ 605,606	1SS254	Diode
D604	SVD1SR35200	Diode
D701～704 Ⓢ⚠	SVDSR1K2	Diode
D705～708	SVD1SR35200	Diode
D709	MA1120-M	Diode
COILS and TRANSFORMERS		
L201	SLF6C1-10	AM Bar Antenna
L202	ELEPK1R2MA	Choke
L203	SLA2B1-1M	AM Antenna
L204	SL02B7-M	AM OSC
L301,302	SLM1C77-K	L.P.F
L303,304	SLQU222-2Y	Choke
L305,306	QLM9Z10K	L.P.F
L401	SL09C9-K	Bias OSC
T201	SLI2B101-M	AM IFT
T202	SLI4B108-Z	FM IFT
T203	SLI4B511-Z	FM IFT
T204	SLI4B513-Z	FM IFT
T701 ⚠	SLT5M453-W	Power Trans
CERAMIC FILTERS		
CF201	SVFE107MS2-A	FM,10.7MHz
CF202	SVFSFZ450F7L	AM,450kHz
CRYSTAL		
X201	SVQ49U452-T	4.5MHz
VARIABLE RESITORS		
VR71	SVNAA13B2-Q	Variable Resistor
VR72	SVNAA23B2-Q	Variable Resistor
VR201	SVNAA53B2-Q	Variable Resistor
VR301～306	EVND4AA00B54	Variable Resistor 50kΩ (B)
VR401,402	EVND4AA00B25	Variable Resistor 200kΩ (B)
VR403	EVND4AA00B53	Variable Resistor 5kΩ (B)

Ref.No.	Part No.	Description
VARIABLE RESITORS		
VR501	EWANF5X15G15	Variable Resistor 100kΩ (G)
VR502	EWAQA6X15A15	Variable Resistor 100kΩ (A)
VR503～507	EWANA5X15G54	Variable Resistor 50kΩ (G)
VARIABLE CAPACITORS		
CT201	ECRHA007A11	Variable Capacitor
CT202	ECRHA010A11	Variable Capacitor
FLUORESCENT DISPLAY TUBE		
LCD201	SALHLC9150-2	
COMPONENT COMBINATIONS		
Z201,202	EXRP181K473C	180p,47kΩ
Z501,502	EXRP120K824T	12pF,820kΩ
LAMP		
PL201	XAMR78S250	
FUSE		
F701 ⚠	XBA2C05TR0	250V,T500mA
SWITHES		
S1,4	SMQT1451	Motor Switch
S2,5	SMQT1466	Mute Switch
S3,6	SMQT1462	Nor/Me DET Switch
S71	SSS138	Phono Speed
S72	SSP66	Phono Motor Switch
S201～212	SSG13	Preset Switch
S301	SSS163	Rec/Play Switch
S401	SSS153	Beat Proof Switch
S501～504	SSH493	Input Switch
S505,506	SSH1159	Dubbing/Dolby Switch
S701 ⚠	SSH1071	Power Source

● CABINET AND CHASSIS PARTS

Ref.No.	Part No.	Description
CABINET AND CHASSIS PARTS		
1	SYE1099	Cassette Lid (1)
2	SYE1100	Cassette Lid (1)
4	SBC662	Button, Input Selector (4)
5	SBD118	Knob,Balance,Grafic (6)
6	SUB240	Connection Rod, Input Selector (4)
7	SBD98-1	Knob,Volume (1)
8	SJN13	Tape Counter (Tape2 only) (1)
9	SBC315-4T	Button,dB, Tape Selector (2)
10	SJJ63D	Mic Jack (1)
11	SGYGD30-KE	Front Panel Ass'y (1)
12	SKU11300	Bottom Bord (1)
13	SHR9774	Joint, Volum (1)
14	SGEGD30L-KK	Plate,Volume (1)
15	SMQ60016	Spring, Cassette Holder (2)
16	SMQ30025-1	Plate,Cassette Holder (2)
17	SMQ4096	Cogwheel, Cassette Holder (2)
18	SKM7560U	Side Cover (Right) (1)
19	SKM7550U	Side Cover (Left) (1)
20	SUW2942	Plate Main P,C,B (1)

Ref.No.	Part No.	Description
CABINET AND CHASSIS PARTS		
21	SBC670-1	Button,Selector (1)
22	SBC669	Button, Preset Tuning (1)
23	SUW2941	Plate,Main P,C,B (1)
24	SMQ30024	Angle,Spoke (1)
25	SUB238	Spoke (1)
26	SUB239	Spoke (1)
27	SHS3066	Felt (4)
28	SBC489	Button,Power (1)
29	SUW2943-1	Plate,Tuner P,C,B (1)
30	SMP384-1	Lamp Cover (1)
31	SJT347	Fuse Holder (2)
32	SJJ71E	Phone Jack (1)
33	SJF4431-1	Speaker Terminal (1)
34	SJF3207-5N	Pin Terminal (1)
35	SJF4315	Antenna Terminal (1)
36	SGP6610E	Rear Cover (1)
37	SML144-1	Bottom Plate (1)
38 ⚠	SJA138-3	Power Cord (1)
39	SHR127	Clamp Cord (1)
40	SUW2932-1	Bracket (1)
41	SHR9732	Holder,LCD (1)
42	SDU249-2	Filter,LCD (1)
43	SMP392	Case,LED (1)
44	SMP396	Case,LED(D219) (1)

Ref.No.	Part No.	Description
SCREWS		
N1	XTB3+10GFR	Tapping,⊕3×10 (24)
N2	XTW3+10T	Tapping,⊕3×10 (12)
N3	XTB3+8G	Tapping,⊕3×8 (8)
N4	XTB4+12JFZ	Tapping,⊕4×12 (8)
N5	XTB4+8F	Tapping,⊕4×8 (4)
N7	XTWS3+10Q	Tapping,⊕3×10 (5)
N8	XTB3+8J1	Tapping,⊕3×8 (3)
N9	XTB3+8J	Tapping,⊕3×8 (2)
N10	XTBS3+8JFR1	Tapping,⊕3×8 (1)
N11	XTW3+8T	Tapping,⊕3×8 (2)
N12 Ⓢ	XWA3B	Washer,3ϕ (2)
N13	XTB3+16J	Tapping,⊕3×16 (2)
N14	SNE270	Cabinet (3)

Ref.No.	Part No.	Description
RECORD PLAYER PARTS		
61	SYE1026-2	Dust Cover (1)
62	SJY4054-4	Turntable Mat (1)
63	SJYGD20-KM2	Turntable Ass'y (1)
64	SJY90080-1	Flat Belt (1)
65	EPA645STC	Tone Arm (1)
66	EPC13STH	Cartridge With Stylus (1)
67	EPS41ST	Stylus (1)
68	SJY5224-1	Lifter (1)
69	SJY5218	Pu Rest (1)
70	SBH9383	Hinge (2)
71	SJY5227	Motor Bracket (1)
72	SHG9260	Motor Rubber (2)
73	MMNV400-KM	Motor Ass'y (1)
74	SBN1132	Slide Knob (1)
75	SJC5	Battery Terminal(-) (1)
76	SJB9005-1	Battery Lid (1)
77	SJC3	Battery Terminal(+) (1)

Ref.No.	Part No.	Description
RECORD PLAYER PARTS		
79	SHG9246-1	Rubber Cap (1)
80	SJY1051U	Player Board (1)
81	SJY5226-1	Tone Arm Plate (1)
82	SJYGD30-KM3	Pu Moving Plate (1)
83	SUS791	Torsion Spring (1)
84	SJY5223	Operating Plate, Switch (1)
86	SUS790	Torsion Spring (1)
87	SJY486	Gear Ass'y (1)
88	SJYGD30-KM1	Operating Plate (1)
89	SJY5225	Actuating Plate (1)
90	SJYGD30-KM	Player Chassis (1)
91	SUD467	Spacer (1)
92	SJYGD30-KM4	Flowting Plate (1)
93	SUW2967	Bracket (1)
94	SHR420	Lock Pin (1)

Ref.No.	Part No.	Description
SCREWS and WASHERS		
N20	XTB3+10G	Tapping,⊕3×10 (2)
N21	XTB3+8J	Tapping,⊕3×8 (5)
N22	XTB3+14J	Tapping,⊕3×14 (1)
N23	XWE3F20	Washer,ϕ3 (1)
N24	XTW3+10Q	Tapping,⊕3×10 (4)
ACCESSORIES		
A1	SQF12552	Instruction Book (1)
A2	SSA269	Feeder Antenna (1)
A3	SJY5018-1	EP Adaptor (1)
A4	XST6D25FB	Transit Screw (2)
PACKINGS		
P1	SPG5445	Carton Box (1)
P2	SPS4590	Pad,Front Bottom (1)
P3	SPS4591	Pad,Rear Bottom (1)
P4	SPS4592	Pad,Front Upper (1)
P5	SPS4593	Pad,Rear Upper (1)
P6	SPS4623-3	Pad,Turntable (1)
P7	SPP226	Set Cover (1)
P8	SPH6400	Sheet,Protection (2)

Printed in Japan
85073100 Ⓝ TM/TN

ORDER NO. HAD8507213C2–A

AM/FM Stereo Radio with Cassette Tape Deck and Record Player

SG-D30

- This booklet contains the specifications and adjusting procedures for SG–D30, written in German and French.
- File this manual together with the SG–D30 service manual (Order No. HAD8507213C2).

- Das vorliegende Büchlein enthält die technische Daten und Justierverfahren für den SG–D30 in deutscher und französischer Sprache.
- Bewahren Sie das Büchlein zusammen mit der Bedienungsanleitung für des SG–D30 auf (Bestell-Nr. HAD8507213C2).

- Cette brochure contient les spécifications et les procédures de mises au point pour le SG–D30, écrites en allemand, et en francais.
- Classer ce manuel en même temps qu'avec le manuel de service du SG–D30 (N° d'order : HAD8507213C2).

DEUTSCH

■ TECHNISCHE DATEN

(Die technischen Daten können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ VERSTÄRKERTEIL

Ausgangsleistung	
Dauerton-Ausgangsleistung bei 1 kHz beide Kanäle ausgesteuert	2 × 23W (5% Klirr, 8 Ω)
Musikleistung	2 × 50W (10% Klirr, 8Ω)
Gesamtklirrfaktor	
halbe Nennleistung bei 1 kHz	0,07% (8 Ω)
Leistungsbandbreite	
beide Kanäle ausgesteuert bei −3 dB	15 Hz ~ 45 kHz (8 Ω)
Frequenzgang	
CD/AUX	20 Hz ~ 30 kHz (−3 dB)
Micro (MIC)	60 Hz ~ 15 kHz (−3 dB)
Eingangsempfindlichkeit und -impedanz	
CD/AUX	150 mV/22 kΩ
Micro (MIC)	1,5 mV/10 kΩ
Equalizer	100 Hz, 330 Hz, 1 kHz, 3,3 kHz, 10 kHz, ±10 dB
Lautsprecherimpedanz	8 Ω ~ 16 Ω

■ UKW-TUNERTEIL

Wellenbereich	87,50 ~ 108,00 MHz (50 kHz-Schritte)
Eingangsempfindlichkeit	17,2 dBf (2,0 µV, IHF '58)
Geräuschabstand 26 dB	1,5 µV (40 kHz mod., 75 Ω)
Gesamtklirrfaktor	
1 kHz	0,15% (mono), 0,4% (stereo)
Geräuschabstand	
Mono	68 dB (76 dB nach IHF)
Frequenzgang	20 Hz ~ 15 kHz (+0,5 dB ~ −2 dB)
Spiegelfrequenz-Dämpfung bei 98 MHz	45 dB
Übersprechdämpfung	40 dB (1 kHz), 35 dB (10 kHz)
Antennenanschluß	75 Ω (unsymmetrisch)

■ MW-TUNERTEIL

Wellenbereiche	522 ~ 1611 kHz (9-kHz-Schritte) 530 ~ 1620 kHz (10-kHz-Schritte)
Eingangsempfindlichkeit (500 mW)	100 µV/m (999 kHz)
Spiegelfrequenz-Dämpfung	40 dB (999 kHz)

■ TONBANDTEIL

Typ	Stereo-Doppelcassettendeck mit Bandendabschaltung
Spurlage	4 Spuren/2 Kanäle
Aufnahme/Wiedergabe	Tonkopf aus Hartpermalloy
Wiedergabe	Tonkopf aus Hartpermalloy
Löschen	2-Spalt-Löschkopf aus Ferrit
Motoren	elektronisch geregelter Gleichstrommotor
Aufnahmesystem	Wechselstrom-Vormagnetisierung, 85 kHz
Löschsystem	Wechselstrom-Löschung, 85 kHz
Bandgeschwindigkeit	4,8 cm/s
Frequenzgang	
Normal	30 Hz~15 kHz (DIN) 40 Hz~14 kHz +3, −6 dB
Metal	30 Hz~17 kHz (DIN) 40 Hz~16 kHz +3, −6 dB
Geräuschspannungsabstand	
ohne Dolby	56 dB (A-WTD)
mit Dolby	65 dB (CCIR)

Gleichlaufschwankungen	0,1% (bewertet)
Umspulzeit	ca. 150 Sek. (für Cassette C-60)

■ PLATTENSPIELERTEIL

Plattenspielersystem	Riemenantrieb
Plattenspierlermotor	Gleichstrommotor
Plattenteller	28 cm
Plattentellerdrehzahl	33-1/3 U/min. und 45 U/min.
Tonabnehmer	Keramischer-Tonabnehmer (EPC-13STH)
Abtastnadel	Saphir-Spitze (EPS-41ST)
Auflagekraft der Abrtastnadel	5,5 g

■ ALLGEMEINE DATEN

Netzspannung	
Für Kontinentaleuropa	Wechselstrom 50 Hz/60 Hz, 220V
Batterien	DC 4,5V
(3 Batterien der Größe AA; Panasonic UM-3 o.ä.)	
Leistungsaufnahme	130 W
Abmessungen (B×H×T)	380 × 319,5 × 346 mm
Gewicht	7,2 kg

■ MESSUNGEN UND JUSTIERUNGEN

MW/UKW

Einstellungen der Bedienelemente und zu verwendende Geräte.

- MW/UKW-Meßsender (MW/UKW-MS)
- Stereo-Modulator
- Verzerrungs-Analysator
- Oszilloskop
- Elektronische Wechselstrom- und Gleichstrom-Voltmeter (EVM).
- Frequenzzähler
- Drosselspule (100μH)
- Widerstand (100kΩ)
- Keramischer Kondensator (200pF)
- Testband QZZCWAT QZZCFM

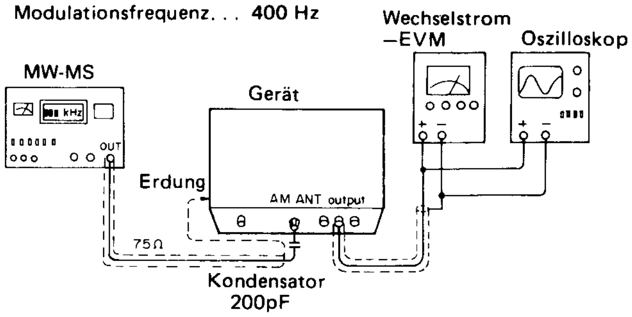
Anmerkung: Für **T201** (MW-ZFT) und **L204** (MW–OSZ.-Spule) werdeven justiert Ersatzteil geliefert. Dien Kern dieses Teils daher nicht drehen.

AM (MW)-HF-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "**AM (MW)**" einstellen.
3. Die Radiofrequenzanzeige und den Meßsender auf **612 kHz** einstellen.
4. **L203** auf maximale Ausgangsleistung abgleichen.
5. Die Radiofrequenzanzeige und den Meßsender auf **1503 kHz** einstellen.
6. **CT202** auf maximale Ausgangsleistung abgleichen.
7. Die Schritte 3—6. wiederholen.

Anmerkung: Der Antenneneingang-Signalpegel muß so niedrig wie möglich und frei von automatischer Verstärkungsregelung (AGC) sein.

ZUSTAND DES MW-MESSENDERS
Modulation........... 30%
Modulationsfrequenz... 400 Hz

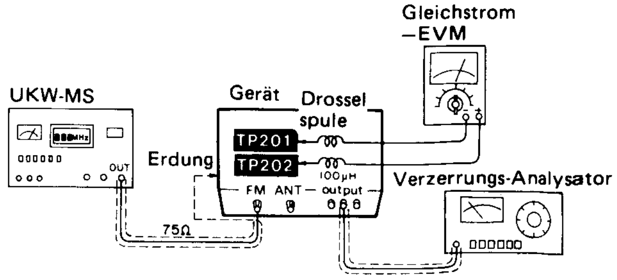


UKW-MONO-VERZERRUNGS-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "**FM (UKW)**" einstellen.
3. Die Radiofrequenzanzeige und den Meßsender auf **100.10 MHz** einstellen.
4. Den Kern von **T203** so justieren, daß die im Signalzustand gemessene Spannung **0 mV (0 ± 30 mV)** im 300mV -Bereich beträgt.
5. **T204** so justieren, daß der Verzerrungsfaktor des linken Kanals minimal wird.
6. Schritte 4 und 5 einige Male wiederholen.
7. Überprüfen, daß die Verzerrungsfaktoren des linken und rechten Kanals fast gleich sind.

Anmerkung: Für die Justierung ist ein Schraubendreher aus Kunststoff zu verwenden.

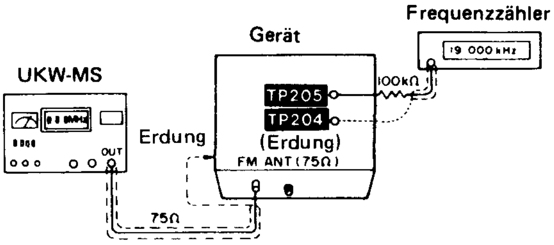
ZUSTAND DES UKW-MESSENDERS
Modulation.......... 100%
Modulationsfrequenz... 400 Hz
Ausgangspegel.........66 dB



UKW-STEREO-JUSTIERUNG (FREIER LAUF)

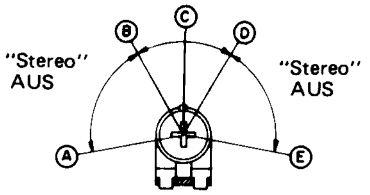
1. Der Testaufbau ist in der Abbildung gezeigt.
2. Den UKW-Betriebsart-Wahlschalter in die "**FM auto**" Position stellen.
3. Die Radiofrequenz-Anzeige und den Meßsender auf **100,10 MHz** einstellen.
4. **VR201** auf **19 kHz ± 30 Hz** auf der Frequenzzähleranzeige justieren.

ZUSTAND DES UKW-MESSENDERS
Modulation. 0
Modulationsfrequenz. . . 0
Ausgangspegel. . . . . .66 dB


Frequenzzähler
19 000 kHz
Gerät
UKW-MS
OUT
Erdung
TP205
TP204
(Erdung)
FM ANT (75Ω)
100kΩ
75Ω

* VERWENDUNG EINES ALTERNATIVSYSTEMS

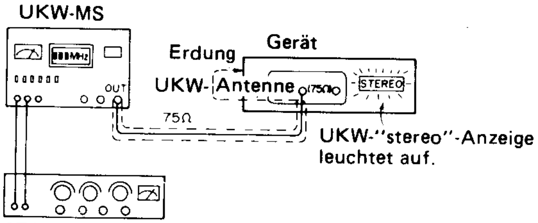
1. Stereosignal vom Meßsender eingeben oder eine Stereo-Sendung empfangen.
2. **VR201** justieren, bis die Stereo-Anzeige aufleuchtet. Den Arm von **VR201** mit Lack sichern, wie in der Abbildung gezeigt.


Ⓑ
Ⓒ
Ⓓ
"Stereo" AUS
"Stereo" AUS
Ⓐ
Ⓔ

VR302

Ⓑ – Ⓓ. . . . . "Stereo"-EIN-Position (Anzeige leuchtet)
Ⓒ. . . . . Punkt der Pilotschaltung justieren.

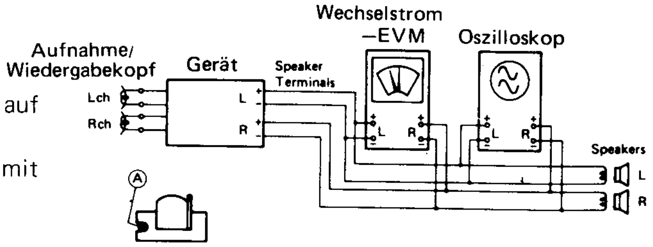
ZUSTAND DES UKW-MESSENDERS
Modulation. 10%
Modulationsfrequenz. . . Pilot (19 kHz)
Ausgangspegel. . . . . .66 dB


UKW-MS
OUT
Erdung
Gerät
UKW-Antenne
75Ω
STEREO
UKW-"stereo"-Anzeige leuchtet auf.

STEREO-MODULATOR
Pilotsignal auf ON. . . . . 19 kHz
Ausgangs-Betriebsart. . . . L + R

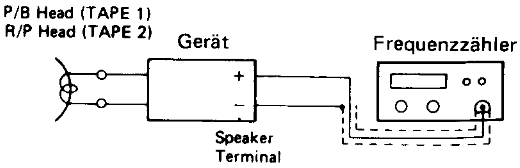
KOPFAZIMUTH-ABGLEICHUNG

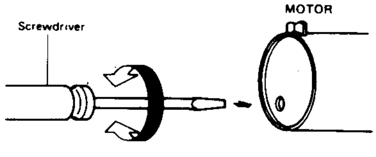
1. Der Testaufbau ist in der Abbildung gezeigt.
2. Wiedergabe-testband QZZCFM. (8 kHz)
3. Schraube Ⓐ für maximale Anzeige für gleichen Ausgang auf beiden Kanälen einstellen.
4. Nach der Abgleichung die Kopfeinstellschraube Ⓐ mit Farbe siegeln.


Aufnahme/
Wiedergabekopf
Gerät
Speaker Terminals
Wechselstrom
–EVM
Oszilloskop
Lch
Rch
L
R
Speakers
L
R
Ⓐ

JUSTIERUNG DER BANDMOTOR-GESCHWINDIGKEIT (Band 1/Band 2)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Wiedergabe-Testband QZZCWAT. (3 kHz)
3. Den Drehwiderstand an der Rückseite des Motors (Siehe Abb. 1) auf 2970 Hz (2920 – 3000 Hz) mit dem Band 1 justieren.
4. Den Drehwiderstand an der Rückseite des Motors (Siehe Abb. 1) auf 2950 Hz (2920 – 3000 Hz) mit dem Band 2 justieren.

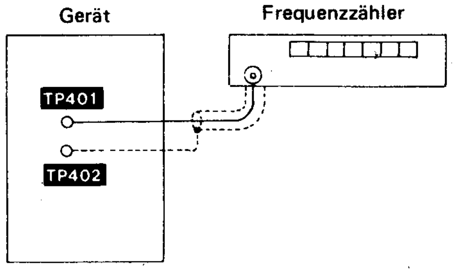

P/B Head (TAPE 1)
R/P Head (TAPE 2)
Gerät
Frequenzzähler
+
–
Speaker Terminal


Screwdriver
MOTOR

(Siehe Abb. 1)

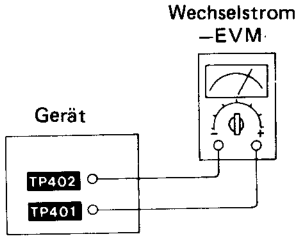
JUSTIERUNG DER VORSPANNUNGS-OSZILLATION (Band 2)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "TAPE (Band)" einstellen.
3. Das Cassettendeck in den Aufnahmezustand versetzen und den "Beat Proof"-Schalter in die "B"-Position stellen.
4. L401 auf 84 – 87 kHz auf der Frequenzzähleranzeige justieren.


Gerät
Frequenzzähler
TP401
TP402

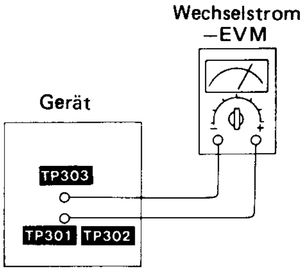
LÖSCHSTROM-JUSTIERUNG (Band 2)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "TAPE (Band)" einstellen.
3. Eine Cassette in das Gerät einsetzen und den Bandsorten-Wahlschalter in die "Metal"-Position stellen.
4. VR403 auf eine Anzeige auf dem elektronischen wechselstrom-voltmeter von 150 ± 5 mV einstellen.


Wechselstrom
—EVM
Gerät
TP402
TP401

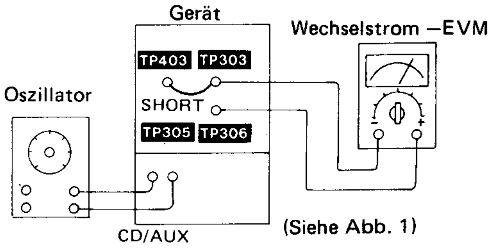
AUFNAHMEVORMAGNETISIERUNG-ABGLEICHUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Das Gerät auf "TAPE (Band)" einstellen.
3. Eine Cassette in das Gerät einsetzen und den Bandsorten-Wahlschalter in die "Normal"-Position stellen.
4. VR401 (L. Kanal) und VR402 (R. Kanal) auf eine Anzeige auf dem elektonischen wechselstrom voltmeter von 4, 2 ± 0.1 mV einstellen.

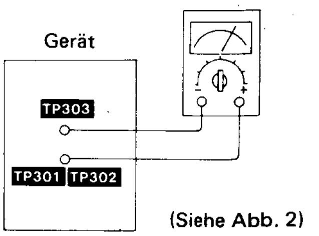

Wechselstrom
—EVM
Gerät
TP303
TP301
TP302

AUFNAHMESTROM-ABGLEICHUNG

1. Der Testaufbau ist in der Abbildung gezeigt. (Siehe Abb. 1)
2. Das Gerät in die CD/AUX-Position einstellen und das Cassettendeck auf STOP schalten.
3. Die Testpunkte TP403 und TP303 kurzshließen.
4. Eine Cassette in das Gerät einsetzen.
5. Ein AF-Oszillatorsignal von (1 kHz) an die CD/AUX-Position anlegen und den Eingang spegel so justieren, daß die Anzeige auf dem elektronischen wechselstrom-voltmeter 410 ± 10 mV boträgt.
6. Der Testaufbau ist in der Abbildung gezeigt. (Siehe Abb. 2)
7. Eine cassette in das Gerät einsetzen und den Bandsorten-Wahlschalter in die "Normal"-Position stellen.
8. VR305 (L. Kanal) und VR306 (R. Kanal) auf eine Anzeige auf dem elektonischen wechselstrom voltmeter von 0.42 ± 0.01 mV einstellen.


Gerät
Wechselstrom —EVM
TP403
TP303
Oszillator
SHORT
TP305
TP306
CD/AUX
TERMINAL

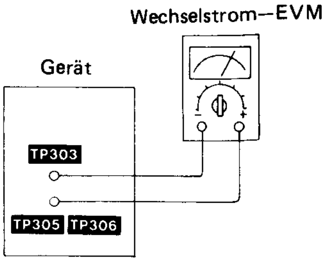
(Siehe Abb. 1)


Wechselstrom —EVM
Gerät
TP303
TP301
TP302

(Siehe Abb. 2)

JUSTIERUNG DER WIEDERGABERSTÄRKUNG (Band 1/Band 2)

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Wiedergabe-Testband QZZCFM. (315 Hz)
3. VR301, 302 (Band 1) und VR303, 304 (Band 2) auf eine Anzeige auf dem elektonischen wechselstrom voltmeter von 410 ± 10 mV einstellen.


Wechselstrom—EVM
Gerät
TP303
TP305
TP306

FRANÇAIS

■ CARACTERISTIQUES

(Sujet à changement sans préavis)

(DIN 45 500)

■ SECTION AMPLIFICATEUR

Puissance de sortie	
Puissance de sortie continue à 1 kHz les deux canaux en circuit	2 × 23W (DHT 5%, 8Ω)
PSM	2× 50W (DHT 10%, 8Ω)
Distorsion harmonique totale à demi-puissance (1 kHz)	0,07% (8Ω)
Réponse de fréquence les deux canaux en circuit, −3 dB	15 Hz~45 kHz (8Ω)
Réponse de fréquence	
CD/AUX (CD/AUX)	20 Hz~30 kHz (−3 dB)
MICRO (MIC)	60 Hz~15 kHz (−3 dB)
Sensibilité et impédance d'entrée	
CD/AUX	150 mV/22kΩ
MICRO (MIC)	1,5 mV/10kΩ
Compensateur de fréquences	100 Hz, 330 Hz, 1 kHz, 3,3 kHz, 10 kHz, ±10 dB
Impédance de charge	8Ω~16Ω

■ SECTION SYNTONISATEUR FM

Gamme de fréquence	87,50~108,00 MHz (par palier de 50 kHz)
Sensibilité	17,2 dBf, (2,0 μV, IHF '58)
S/B 26 dB	1,5 μV (40 kHz mod., 75 Ω)
Distorsion harmonique totale	
1 kHz	0.15% (mono), 0.4% (stéréo)
Signal/Bruit	
MONO	68 dB (76 dB, IHF)
Réponse de fréquence	20 Hz~15 kHz, +0,5 dB~−2 dB
Rejection d'image à 98 MHz	45 dB
Séparation stéréophonique	40 dB (1 kHz), 35 dB (10 kHz)
Bornes d'antenne	75Ω (asymétrique)

■ SECTION SYNTONISATEUR AM

Gamme de fréquence	522~1611 kHz (par palier de 9 kHz) 530~1620 kHz (par palier de 10 kHz)
Sensibilité (500 mW)	100μV/m (999 kHz)
Réjection d'image	40 dB (999 kHz)

■ PLATINE CASSETTE

Platine	Platine stéréo à double cassetts et arrêt automatique
Pistes	2 voies, 4 pistes
Enregistrement/lecture	Tête Solid Permalloy
Lecture	Tête Solid Permalloy
Effacement	Tête ferrite 2 entrefers
Moteurs	Moteur CC à asservissement électronique
Système d'enregistrement	Polarisation C.A. 85 kHz
Effacement	Effacement C.A. 85 kHz
Vitesse de bande	4,8 cm/sec.
Réponse de fréquence	
Normal	30 Hz~15 kHz (DIN) 40 Hz~14 kHz +3, −6 dB
Metal	30 Hz~17 kHz (DIN) 40 Hz~16 kHz+3, −6 dB
RAPPORT S/B	
Sans DOLBY NR	56 dB (A-WTD)
Avec DOLBY NR	65 dB (CCIR)
Pleurage et scintillement	0,1% (WRMS)
Temps de bobinage et de rebobinage	environ 150 secondes avec une cassette C-60

■ SECTION TOURNE-DISQUE

Système	Tourne-disque automatique entraîné par courroie
Moteur phono	Moteur CC à asservissement électronique
Taille de plateau	28 cm
Vitesses de rotation	33-1/3 et 45 t/mn.
Cellule phonoélectrice	Céramique (EPC-13STH)
Pointe de lecture	Saphir (EPS-41ST)
Plage de force d'appui	5,5 g

■ DIVERS

Alimentation	
Pour l'Europe	CA 50 Hz/60 Hz, 220V
Piles	4,5V de c.c. (3 piles de type "AA", Panasonic UM-3 ou équivalent)
Consommation	130W
Dimensions (L×H×Pr)	380 × 319,5 × 346 mm
Poids	7,2 kg

■ MESURAGES ET REGLAGES

MW/FM

Positionnements des commandes et équipement utilisé

- Générateur de signaux M.F. et A.M. (AM et FM-SG).
- Modulateur stéréophonique
- Analyseur de distorsion
- Oscilloscope
- Voltmètre électronique à C.A. et C.C. (EVM).
- Compteur de fréquence
- Bobine d'amortissement d'arrêt (100μH)
- Résistance (100kΩ)
- Condensateur céramique (200pF)
- Bande étalon QZZCWAT QZZCFM

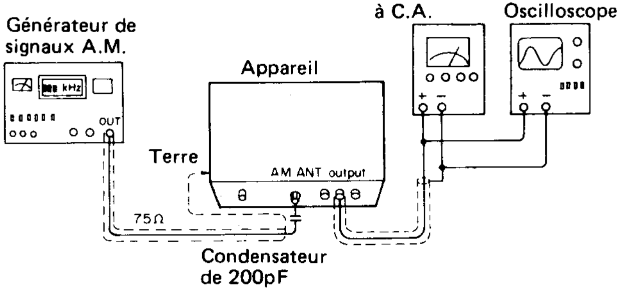
Nota: Pour **T201** (Mod. d'ampl.-Transf. de fréq. inter.) et **L204** (Bobine oscillatrice de mod. d'ampli.) des pièces réglées sont fournies.
Aussi, ne pas tourner les noyaux de ces éléments.

REGLAGE DE A.M.-H.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position "**AM**".
3. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **612 kHz**.
4. Régler **L203** pour une sortie maximale.
5. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **1503 kHz**.
6. Régler **CT202** pour une sortie maximale.
7. Répéter les étapes 3 ~ 6.

Nota: Le niveau d'entrée d'antenne doit être aussi bas que possible étant libéré de la commande automatique de gain.

CONDITION DU GENERATEUR DE SIGNAUX A.M.
Modulation 30%
Fréquence de modulation . . 400 Hz

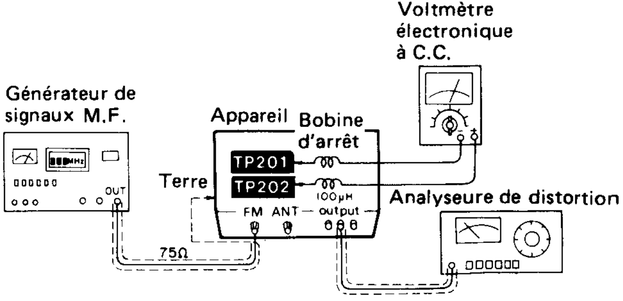

Voltmètre électronique à C.A.
Oscilloscope
Générateur de signaux A.M.
Appareil
OUT
Terre
AM ANT output
75Ω
Condensateur de 200pF

REGLAGE DE DISTORSION MONOPHONIQUE M.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position "**FM**" (M.F.).
3. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **100,10 MHz**.
4. Régler le noyau de **T203** de telle sorte que la tension mesurée sur le mode de signaux soit de **0 mV (0 ± 30 mV)** dans une plage de 300mV.
5. Ajuster **T204** de telle que le facteur de distorsion du canal de gauche soit minimisé.
6. Répéter les étapes 4 et 5 quelques fois.
7. S'assurer que les facteurs de distorsion du canal de gauche et du canal de droite soient sensiblement les mêmes l'un par rapport à l'autre.

Nota: Le tournevis de réglage utilisé devra être fait en résines.

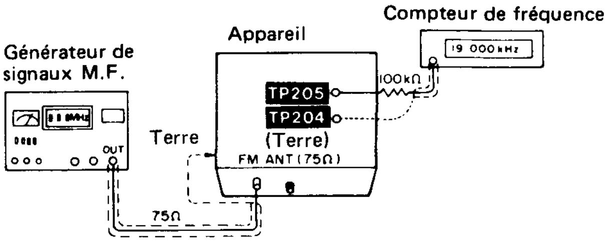
CONDITION DU GENERATEUR DE SIGNAUX M.F.
Modulation 100%
Fréquence de modulation. . .400 Hz
Niveau de sortie. . . . . 66 dB


Voltmètre électronique à C.C.
Générateur de signaux M.F.
Appareil
Bobine d'arrêt
TP201
TP202
100μH
OUT
Terre
FM ANT
output
75Ω
Analyseure de distortion

REGLAGE STEREO M.F. (NON-ASSERVIE)

1. Le raccordement de l'équipement d'essai est montré sur la figure.
2. Régler l'appareil sur la position "**FM auto**". (Avec le bouton-sélecteur de mode FM.)
3. Disposer le réglage du générateur de signaux et l'affichage de radiofréquence sur 100,10 MHz.
4. Ajuster **VR201** pour **19 kHz ± 30 Hz** sur le compteur de lecture de fréquences.

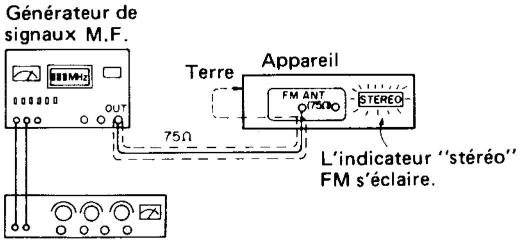
CONDITION DU GENERATEUR
DE SIGNAUX M.F.
Modulation............. 0
Fréquence de modulation. . .0
Niveau de sortie.......... 66 dB


Compteur de fréquence
19 000kHz
Appareil
Générateur de signaux M.F.
OUT
Terre
TP205
TP204
(Terre)
FM ANT (75Ω)
100kΩ
75Ω

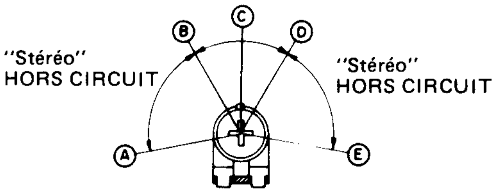
* EN UTILISANT UN SYSTEME ALTERNATIF

1. Appliquer un signal stéréo à partir du générateur ou recevoir une émission stéréo.
2. Ajuster **VR201** jusqu'à ce que l'indicateur stéréo s'éclaire. Coller le bras de **VR201** comme il est montré sur la figure.

CONDITION DU GENERATEUR
DE SIGNAUX M.F.
Modulation............. 10%
Fréquence de modulation. . .Pilote (19 kHz)
Niveau de sortie.......... 66 dB


Générateur de signaux M.F.
OUT
Terre
Appareil
FM ANT (75Ω)
STEREO
75Ω
L'indicateur "stéréo" FM s'éclaire.

MODULATEUR STEREO
Signal pilote sun "ON" (mise en circuit) . . . 19 kHz
Mode de sortie....................... Gauche + Droite

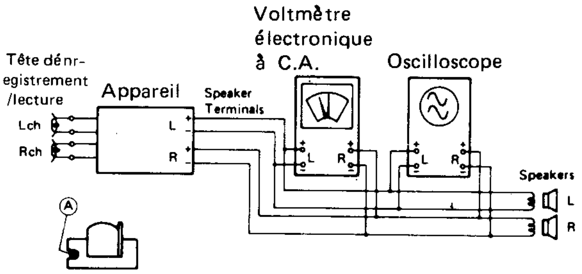

"Stéréo" HORS CIRCUIT
"Stéréo" HORS CIRCUIT
Ⓐ
Ⓑ
Ⓒ
Ⓓ
Ⓔ

VR301

Ⓑ – Ⓓ ..... Position de MISE EN CIRCUIT "Stéréo". (Eclairage de l'indicateur)
Ⓒ......... Point de réglage du circuit pilote.

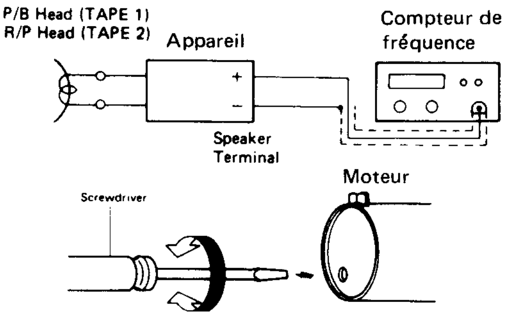
REGLAGE D'AZIMUT DE LA TETE (Bande 2)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Bande de reproduction d'essai QZZCFM (8 kHz)
3. Régler la vis Ⓐ afin d'obtenir une indication maximale d'égalisation de sortie des deux canaux.
4. Aprés l'alignement bloquer la vis Ⓐ de re'glage de tête avec de la laque.


Voltmètre électronique à C.A.
Oscilloscope
Tête dénr-egistrement /lecture
Appareil
Speaker Terminals
Lch
Rch
L
R
Speakers
L
R
Ⓐ

REGLAGE DE LA VITESSE DU MOTEUR DE LA BANDE (Bande 1/Bande 2)

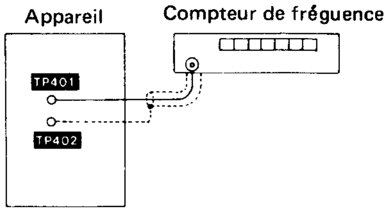
1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Bande de reproduction d'essai QZZCWAT (3 kHz)
3. Ajuster VR à l'arrière du moteur (Se référer à la Fig. 1) pour obtenir 2970 Hz (2920 – 3000 Hz) avec la bande 1.
4. Ajuster VR à l'arrière du moteur (Se référer à la Fig. 1) pour obtenir 2950 Hz (2920 – 3000 Hz) avec la bande 2.


P/B Head (TAPE 1)
R/P Head (TAPE 2)
Appareil
Compteur de fréquence
+
–
Speaker Terminal
Moteur
Screwdriver

(Se référer à la Fig.1)

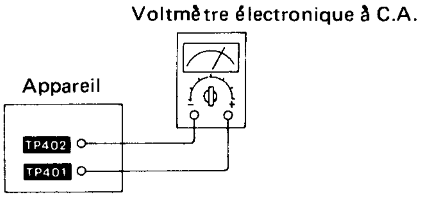
REGLAGE DE L'OSCILLATION DE POLARISATION (Bande 2)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur la position "TAPE (Bande)".
3. Placer la platine pour cassette sur le mode d'enregistrement et le commutateur d'anti-battement sur la position "B".
4. Ajuster L401 pour obtenir une lecture du compteur de froguences de 84–87 kHz.


Appareil
Compteur de fréguence
TP401
TP402

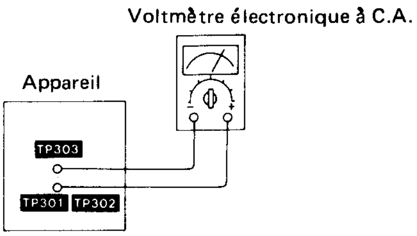
REGLAGE DU COURANT D'EFFACEMENT (Bande 2)

1. Le raccordement de l'équipement déssai est montré sur l'illustration.
2. Rogler l'appareil sur la position "TAPE (Bande)".
3. Placer la platine pour cassette sur le mode d'enregistrement et le sélecteur de bande sur la position pour bande métallisée.
4. Ajuster VR403 pour obtenir 150 ± 5mV sur la voltmètre électronique à C.A.


Voltmètre électronique à C.A.
Appareil
TP402
TP401

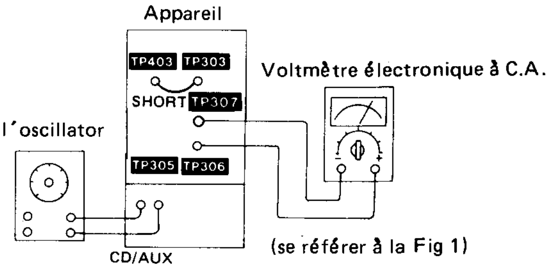
REGLAGE DE POLARISATION D'ENREGISTREMENT (Bande 2)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Rogler l'appareil sur la position "TAPE (Bande)".
3. Placer la platine pour cassette sur le mode d'enregistrement et le sélectour de bande sur la position pour bande normal.
4. Ajuster VR401 (canal de gauche) et VR402 (canal de droite) pour obtenir 4,2 ± 0,1mV sur le voltmétre électronique à C.A.

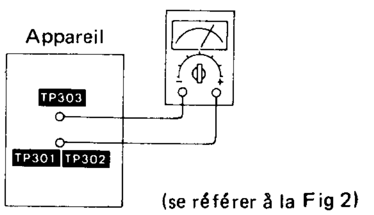

Voltmètre électronique à C.A.
Appareil
TP303
TP301
TP302

REGLAGE DU COURANT D'EFFACEMENT (Bande 2)

1. Le paccordement de l'équipement d'essai est montré sur l'illustration. (Se référer à la Fig. 1)
2. Placer l'appareil sur la position CD/AUX et la platine pour cassette sur le mode d'ARRET.
3. Court-circuiter les points de mesure TP403 et TP303.
4. Placer la platine pour cassette sur le mode d'enregistrement.
5. Fournir un signal à l'oscillateur de frequence audio (1 kHz) dans la position de CD/AUX et régler le niveau d'entrée pour obtenir 410 ± 10mV sur le voltmètre électronique à C.A.
6. Le racordement de l'équipement d'essai est mortré sur l'illustration. (Se référer à la Fig. 2)
7. Placer la platine pour cassette sur le mode d'enregistrement et le séleiteur de bande sur la position pour bande normal.
8. Ajuster VR305 (canal de gauche) et VR306 (canal de droite) pour obtenir 0,42 ± 0,01mV sur le voltmétre électronique à C.A.


Appareil
TP403
TP303
SHORT
TP307
Voltmètre électronique à C.A.
l'oscillator
TP305
TP306
CD/AUX TERMINAL

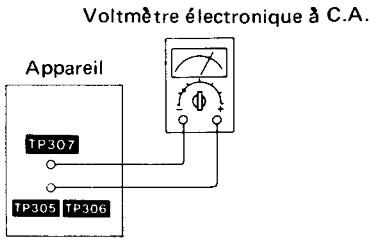
(se référer à la Fig 1)


Voltmètre électronique à C.A.
Appareil
TP303
TP301
TP302

(se référer à la Fig 2)

REGLAGE DE L'AMPLIFICATION DE LECTURE (Bande 1/Bande 2)

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Bande de reproduction d'essai QZZCFM (315 kHz)
3. Ajuster VR301, 302 (Bande 1) et VR303, 304 (Bande 2) pour obtenir 410 ± 10mV sur le voltmètre électronique 2 C.A.


Voltmètre électronique à C.A.
Appareil
TP307
TP305
TP306